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ABSTRACT

Data from the Survey of Earned Doctorates are presented in 11 charts and 15 tables on science and engineering (SE) doctorate production for the period from 1960 through 1982. Data in charts focus on total SE doctorates; SE doctorates by major field; racial/ethnic identity of 1975 and 1982 SE doctorates; citizenship status of SE doctorates; trends in university and college employment; postgraduation employment commitments; proportion of new SE doctorates employed within degree of field; proportion of new SE doctorates obtained in same field as the bachelor's and median lapsed time between receipt of baccalureate and SE doctorate by sex. Among the data in tables are: new SE doctorates by subfield and sex and by subfield and citizenship; new SE doctorates awarded to U.S. citizens and non-U.S. citizens by subfield and race; median age of new SE doctorates by major field and sex; field-switching between baccalaureate and doctoral degrees by major field; distribution of SE doctorates at top 100 doctorate-granting institutions by major field and sex; top 300 baccalaureate institutions of new SE doctorates by major field; and distribution of new SE doctorates with definite employment commitments in the United States by employment sector, major field, and sex. (JN)

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general notes

This publication is the second in a new series based upon the Survey of Earned Doctorates. It presents data on science and engineering (S/E) doctorate production for the period from 1960 through 1982. The Division of Science Resources Studies (SRS) disseminates information about scientific and technical personnel through various types of publications. First results are published in concise summary form in the Science Resources Studies Highlights series. Next comes publications that contain extensive tabular and/or graphic presentations, of which this document is an example. Finally, all available information is integrated and summarized in overview reports such as Science and Engineering Personnel: A National Overview.

The Survey of Earned Doctorates has been conducted annually by the National Academy of Sciences for the National Science Foundation (NSF) and other Federal agencies since 1957. Information from this survey becomes part of the Doctorate Records File, which includes about 725,000 records for doctorates awarded since 1920 by regionally accredited universities and colleges. Only data for the 1960-82 period are presented here. Doctoral degrees such as the Ph. D. or D. Sc. are included in these surveys, but first-professional degrees such as the J.D. or M.D. are not. Approximately 95 percent of the annual cohort of doctorates responded to the questionnaire distributed through the cooperation of the Graduate Deans. Partial data from public sources are added to the file for nonrespondents. The data for a given year include all doctorates awarded in the 12-month period ending on June 30 of that year.

Detailed data for 1960 through 1982 are published here for S/E fields according to the NSF taxonomy, although the survey includes non-S/E fields, e.g., the humanities. Changes during this period in the field taxonomy or in particular items of the questionnaire are described in the accompanying footnotes. The footnotes also furnish details on additions or deletions of fields from the NSF taxonomy. In the tables a zero (0) indicates that no doctorates were produced that year; a dash (-) indicates that data are not available for a given period either because a field had been deleted earlier or because data collection for a particular field had not yet begun.

Year	Total Ph.D.'s	S/E Ph.D.'s	NCES/NSF Ratio	
			Total Ph.D.'s	S/E Ph.D.'s
1960 ..	9,733	6,263	1.01	.97
1961 ..	10,413	6,721	1.02	.97
1962 ..	11,500	7,438	1.01	.97
1963 ..	12,728	8,219	1.01	.98
1964 ..	14,325	9,224	1.01	.98
1965 ..	16,340	10,476	1.01	.98
1966 ..	17,949	11,458	1.02	.99
1967 ..	20,403	12,982	1.01	.98
1968 ..	22,936	14,448	1.01	.98
1969 ..	25,743	16,039	1.02	.99
1970 ..	29,498	17,743	1.01	.99
1971 ..	31,867	18,948	1.01	.97
1972 ..	33,043	19,009	1.01	.97
1973 ..	33,755	19,001	1.03	.98
1974 ..	33,047	18,313	1.02	.98
1975 ..	32,951	18,358	1.03	.97
1976 ..	32,946	17,864	1.03	.97
1977 ..	31,718	17,418	1.05	.97
1978 ..	30,873	17,048	1.04	.95
1979 ..	31,235	17,245	1.05	.95
1980 ..	31,013	17,197	1.05	.96
1981 ..	31,342	17,634	1.05	.96

SOURCES: National Science Foundation and National Center for Education Statistics

A separate NSF publication, *Science and Engineering Degrees: 1950-80* (NSF 82-307), also contains data on S/E doctorates collected by the National Center for Education Statistics (NCES) and reclassified according to the NSF taxonomy. Users of the two reference documents *Science and Engineering Doctorates: 1960-82* and *Science and Engineering Degrees: 1950-80* should be aware that the data for total and S/E doctorates differ slightly because of different data collection methods. The differences between the two data series, as shown in the table, have been generally consistent over the 1960-82 period.

Data from the Survey of Earned Doctorates, reported here, are collected directly from the individual doctorates, and the degree data collected through the NCES Higher Education General Information Survey (HEGIS) are supplied by institutional representatives. The number of S/E degrees differs slightly between the two sources both because of the different suppliers of the data and because of differences in field classification systems. In addition, the NSF data on total degrees are restricted to research doctorates while those of NCES may include nonresearch doctorates. Because the NCES HEGIS includes information on bachelor's, master's, and doctor's degrees, that source is the more appropriate for studying relationships between degrees at different levels. The Survey of Earned Doctorates is better suited for describing the characteristics of doctorate recipients.

Requests for additional information concerning the survey findings should be directed to Mr. Felix H. Lindsay at the following address:

Supply and Education Analysis Group
Division of Science Resources Studies
National Science Foundation
Washington, D.C. 20550
(202) 634-4787

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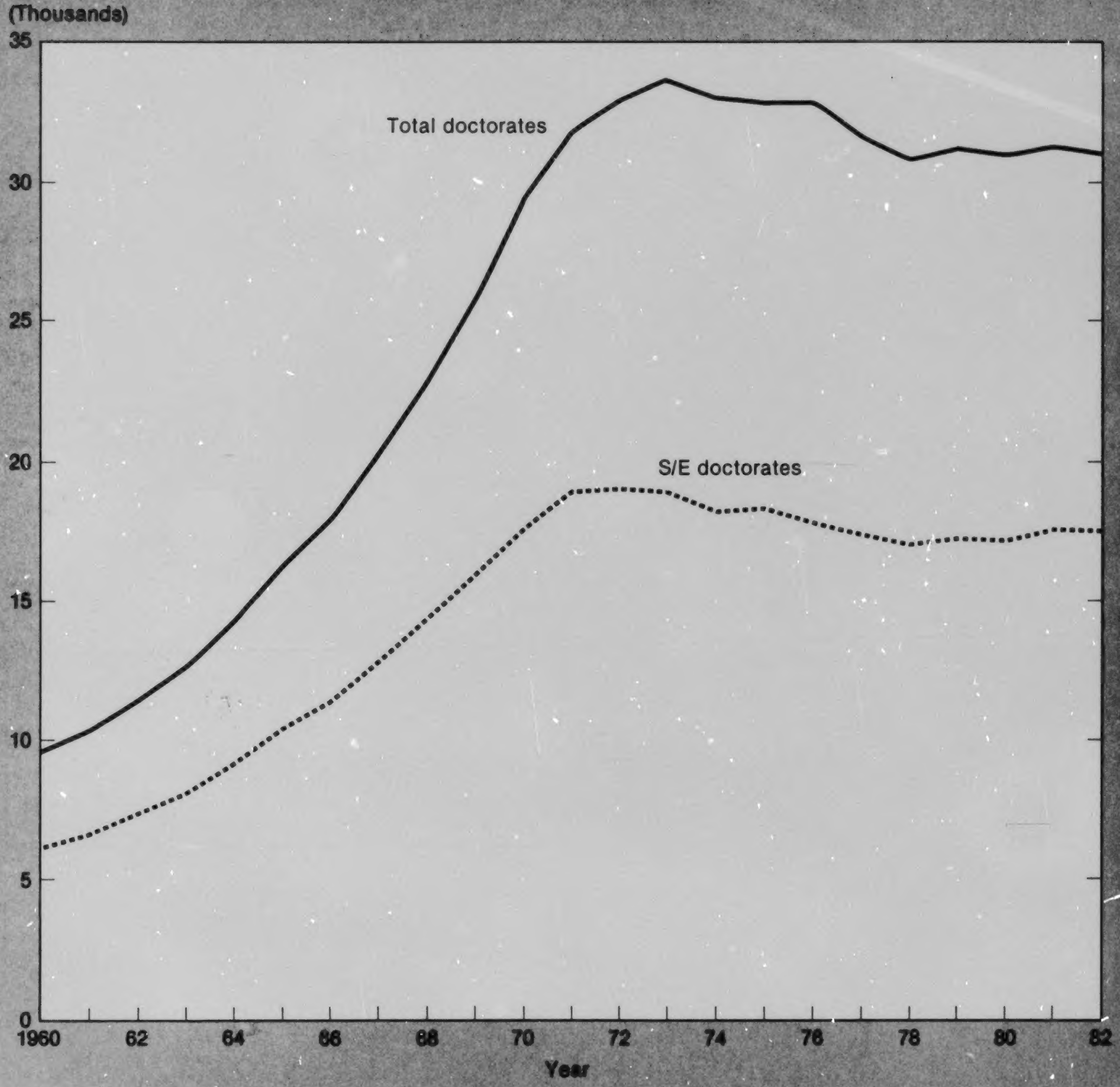
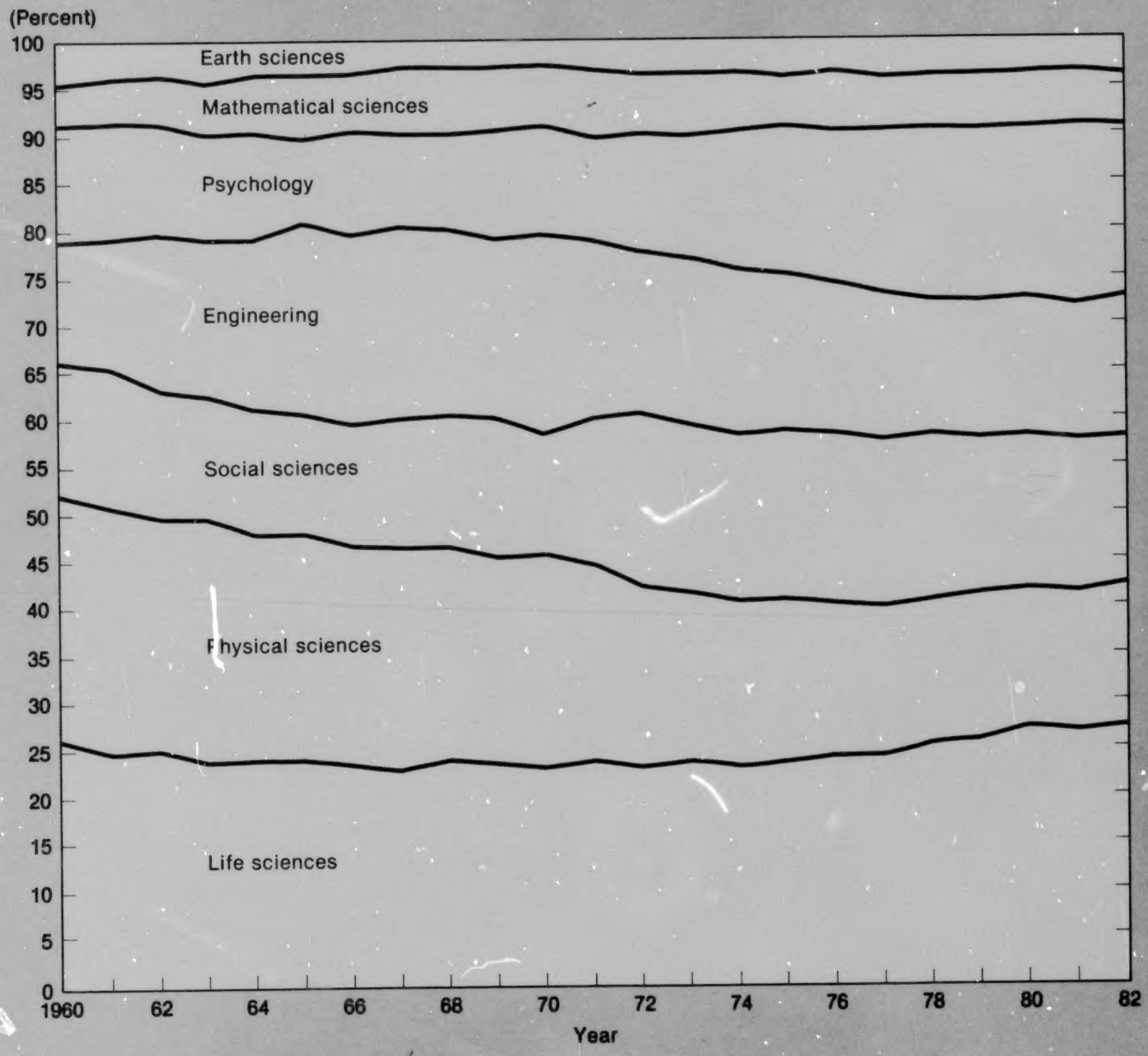
Chart 1. Science/engineering (S/E) doctorates



- The science/engineering doctorate production in 1982 was 7 percent below that of the 1972 peak. The decline since 1972 resulted from large decreases in doctorates earned by men with U.S. citizenship and was partially offset by increases in doctorates earned by U.S. women and non-U.S. citizens.

SOURCES: National Science Foundation and National Research Council

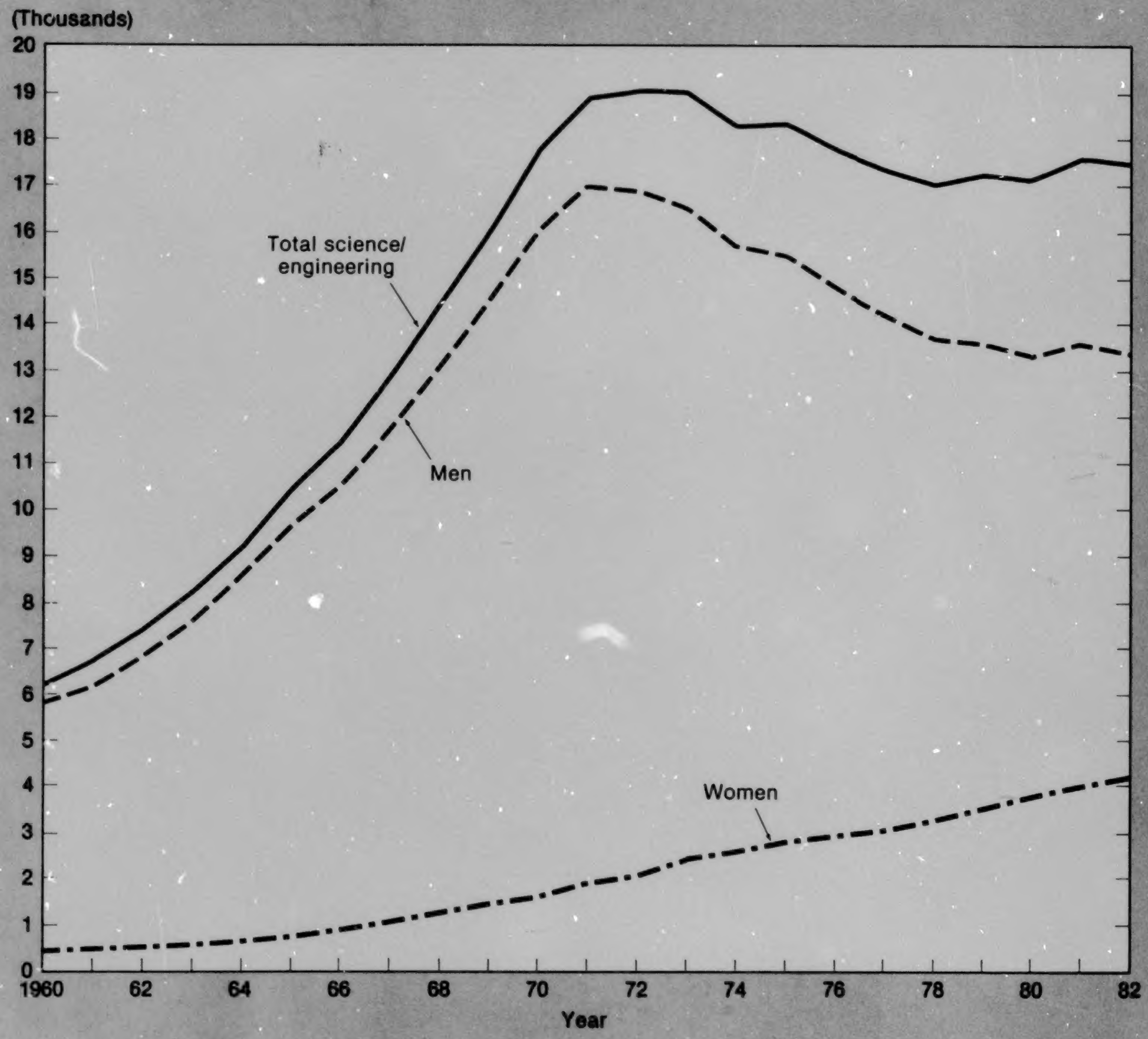
Chart 2. Shares of science/engineering doctorates by major field



- The field composition of new science/engineering doctorates has shifted since the sixties. The share of doctorates in social sciences and psychology rose from 26 percent in 1960 to 33 percent in 1982, while the share for the physical sciences declined from 25 percent to 15 percent. Engineering increased to 20 percent in the late sixties but subsequently declined to 15 percent.

SOURCES: National Science Foundation and National Research Council

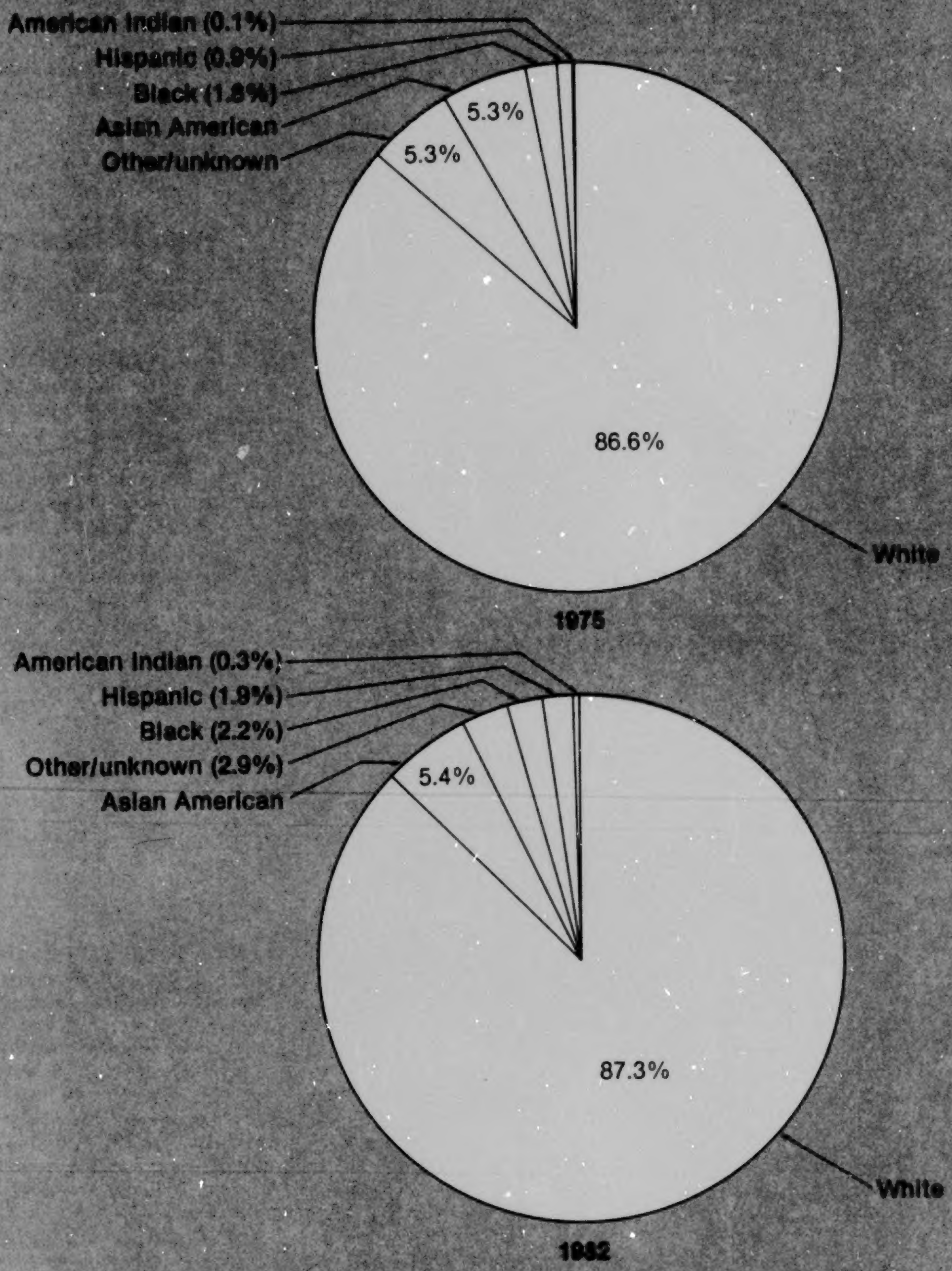
Chart 3. Science/engineering doctorates by sex



- The number of science/engineering (S/E) doctorates granted to women increased each year, and almost doubled in the last 10 years. In contrast, the number awarded to men decreased by 21 percent since their peak in 1971. Women increased their share of S/E doctorates from 10 percent in 1971 to more than 23 percent in 1982. Women received 45 percent of the doctorates in psychology and more than 25 percent in social and life sciences.

SOURCES: National Science Foundation and National Research Council

Chart 4. Racial/ethnic identity of 1975 and 1982 science/engineering doctorates[a]



1975

1982

- Asian American constitutes the largest group among minority science/engineering doctorates. Comparisons between data for 1975 and 1982 should be made with care. Because of the reduced number of "other/unknown" identities in 1982, the apparent increases in percentages for each of the other categories may not be significant.

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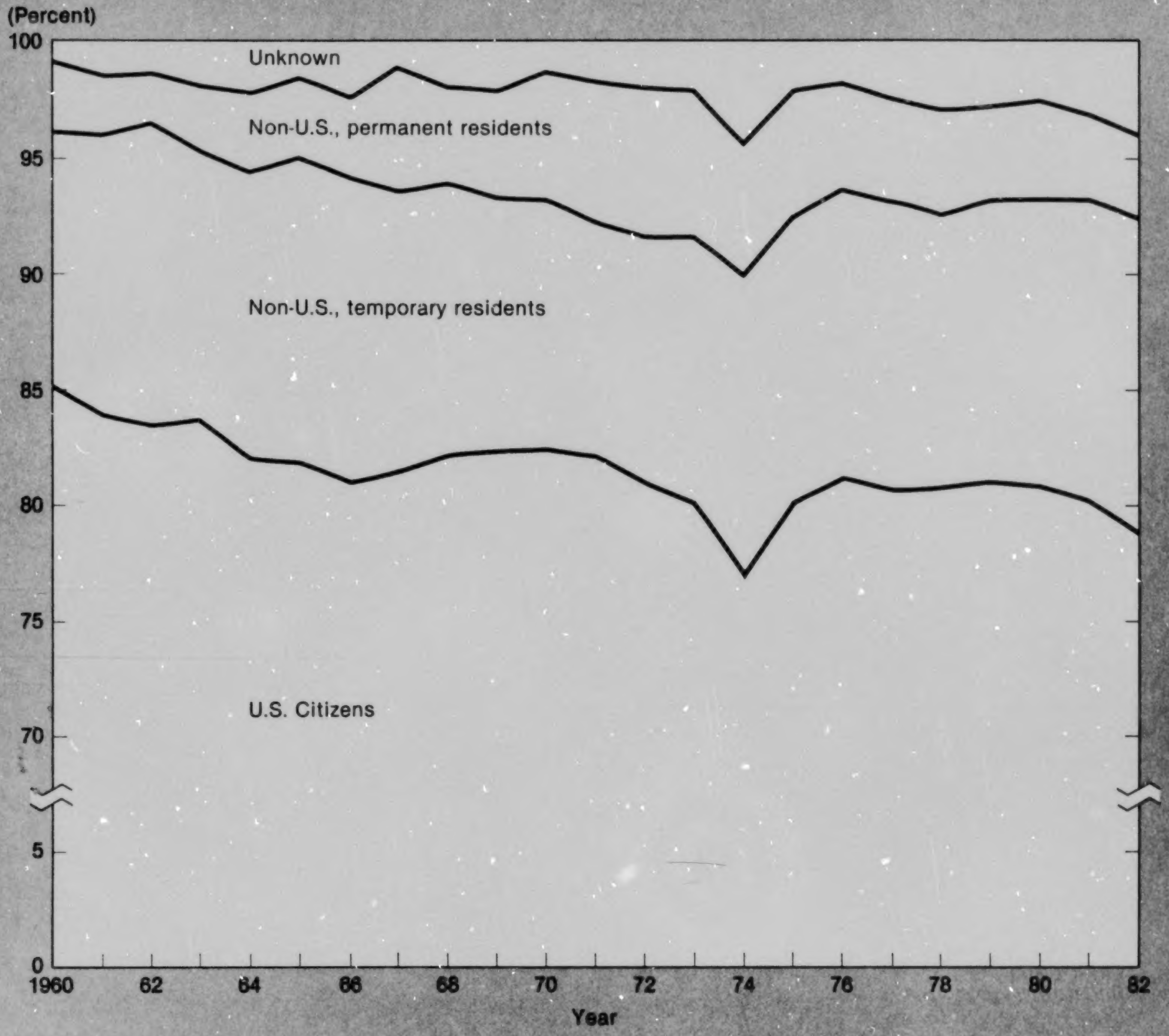
[a]Only U.S. Citizens or non-U.S. citizens with permanent U.S. resident status are included in this chart.

SOURCES: National Science Foundation and National Research Council

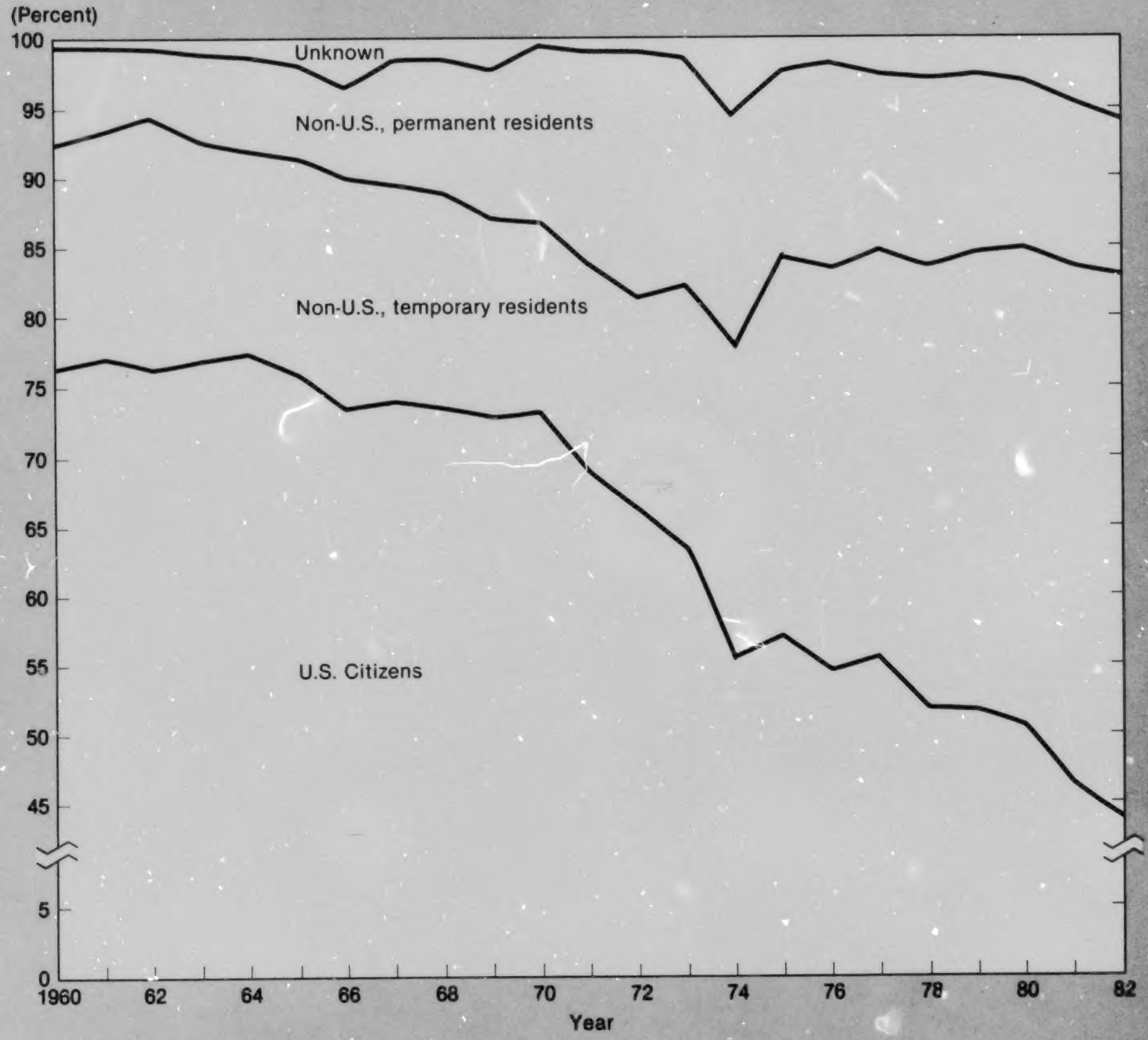
Chart 5. Citizenship status of science doctorates



- Most science doctorates (excluding engineering) are awarded to U.S. citizens, but this proportion has declined since 1960 from 85 percent to 79 percent in 1982. The share awarded to non-U.S. citizens who are temporary residents in the United States increased from 10 percent in 1971 to more than 13 percent in 1982. During the same period the share awarded to noncitizens who are permanent residents decreased from 6 percent to 4 percent.

SOURCES: National Science Foundation and National Research Council

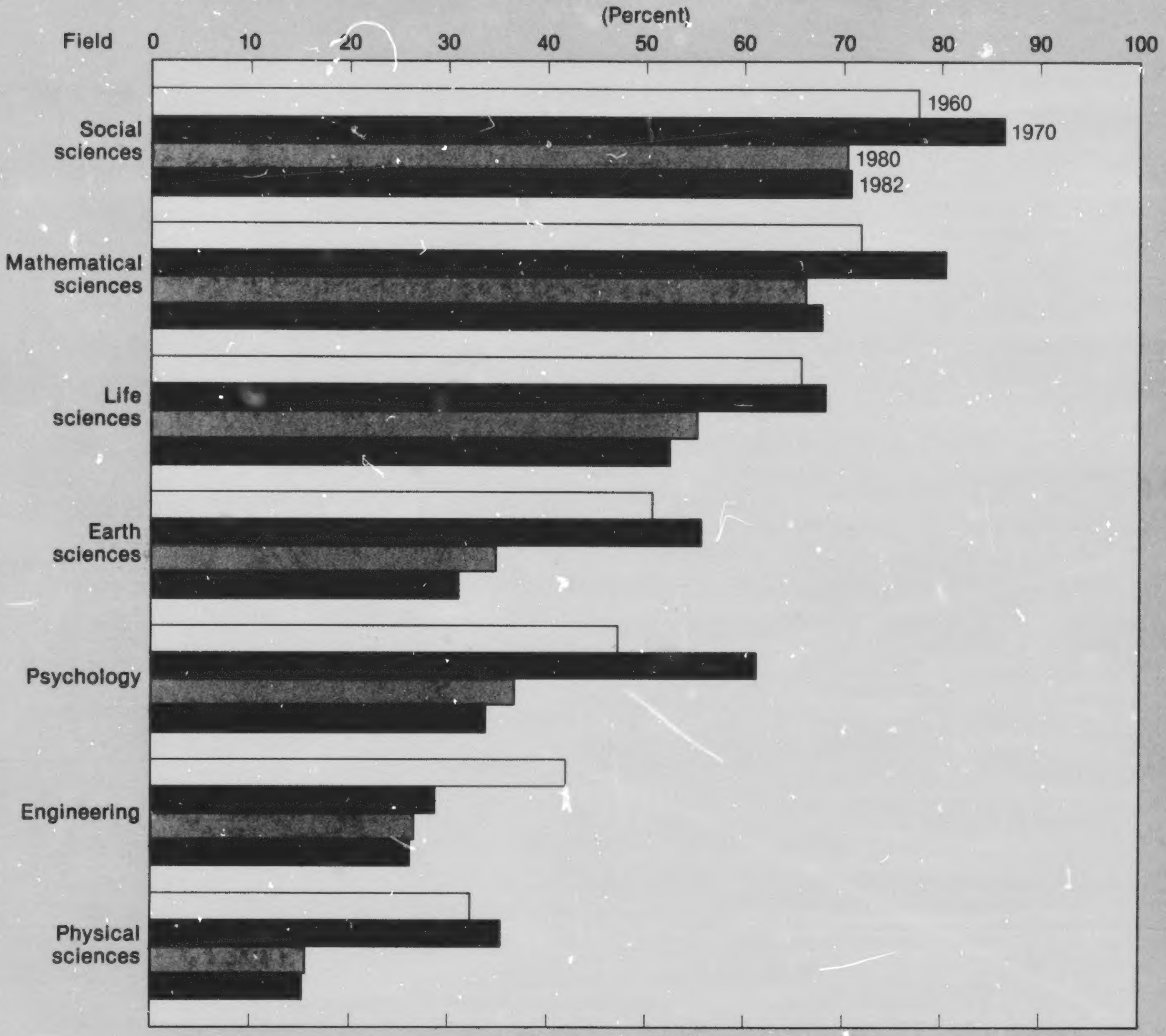
Chart 6. Citizenship status of engineering doctorates



- Since 1972, the number of engineering doctorates awarded non-U.S. citizens who are temporary residents doubled to over 1,000 while the number awarded to U.S. citizens declined by one-half to less than 1,200. In both 1981 and 1982, moreover, the number of engineering doctorates awarded to non-U.S. citizens — both temporary and permanent residents — exceeded the number awarded to U.S. citizens.

SOURCES: National Science Foundation and National Research Council

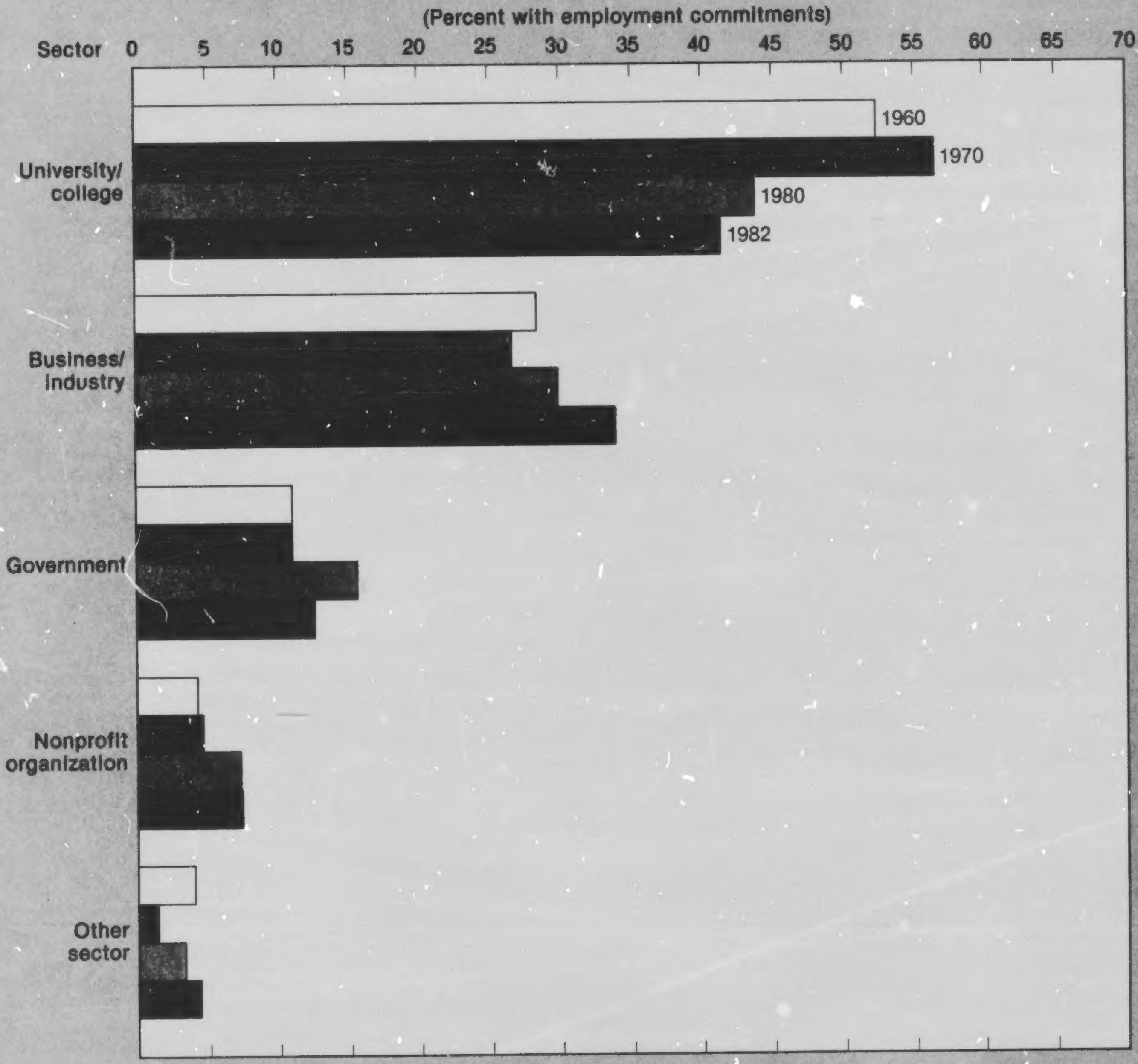
Chart 7. Trends in university and college employment commitments among science/engineering doctorates by major fields: selected years



- Science/engineering doctorate recipients with employment commitments from universities and colleges — as a percentage of all those with commitments — declined from a peak of 60 percent in 1971 to 42 percent in 1982. The sharpest declines between 1980 and 1982 occurred in earth sciences, psychology, and life sciences.

SOURCES: National Science Foundation and National Research Council

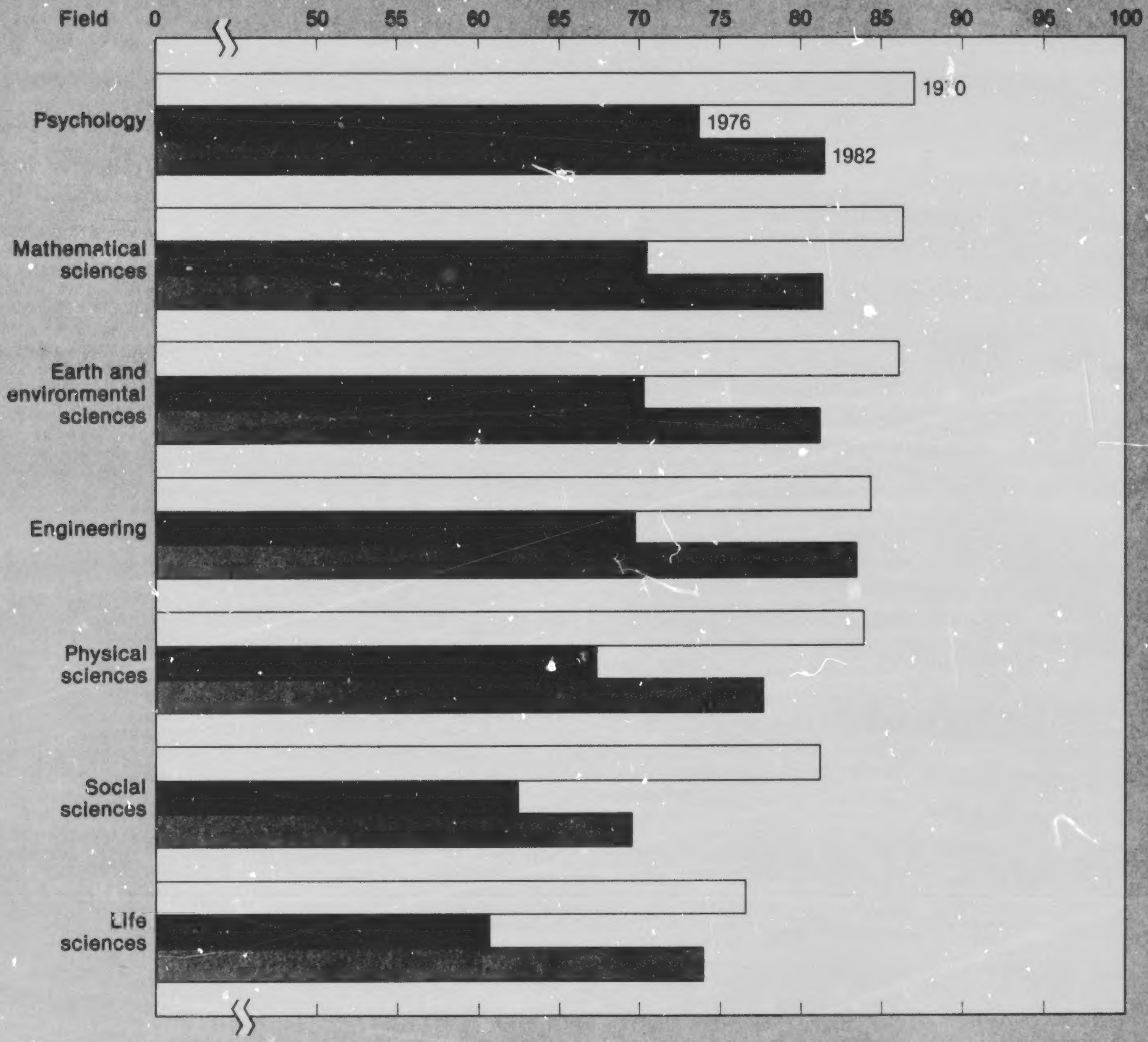
Chart 8. Postgraduation employment commitments by sector for science/engineering doctorates: selected years



- In 1976 new science/engineering doctorates received twice as many employment commitments in the university and college sector as in the business and industry sector. In 1982, however, there were four commitments in business and industry for every five at universities and colleges.

SOURCES: National Science Foundation and National Research Council

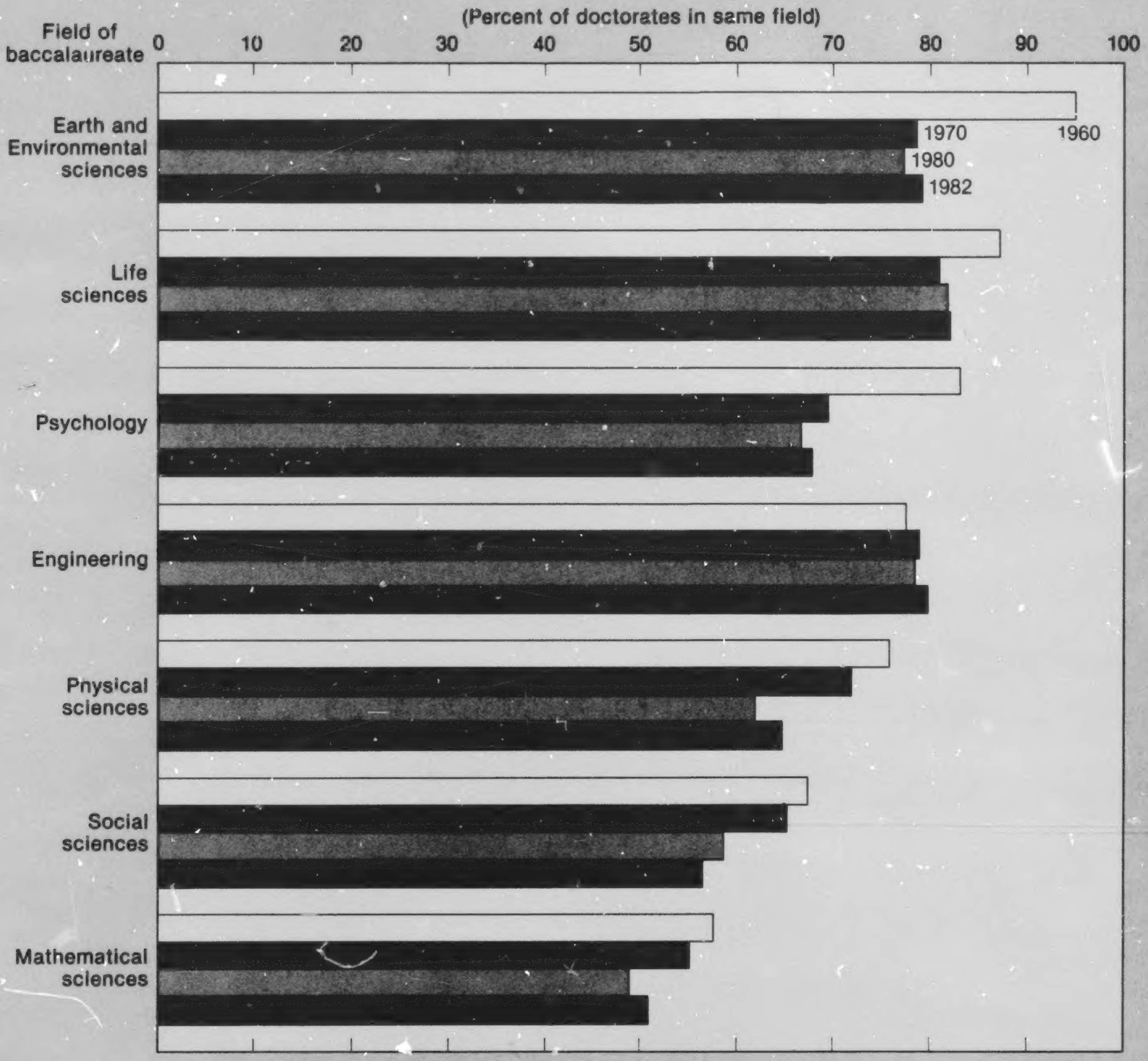
Chart 9. Proportion of new science/engineering doctorates employed within field of degree: selected years



• The percentage of science/engineering doctorates who obtained immediate employment within their field of degree has increased in all field groups since 1978. The proportions of men and women obtaining immediate employment within their field of degree do not differ significantly.

SOURCES: National Science Foundation and National Research Council

Chart 10. Proportion of new science/engineering doctorates obtained in same field as that of baccalaureate: selected years[a]

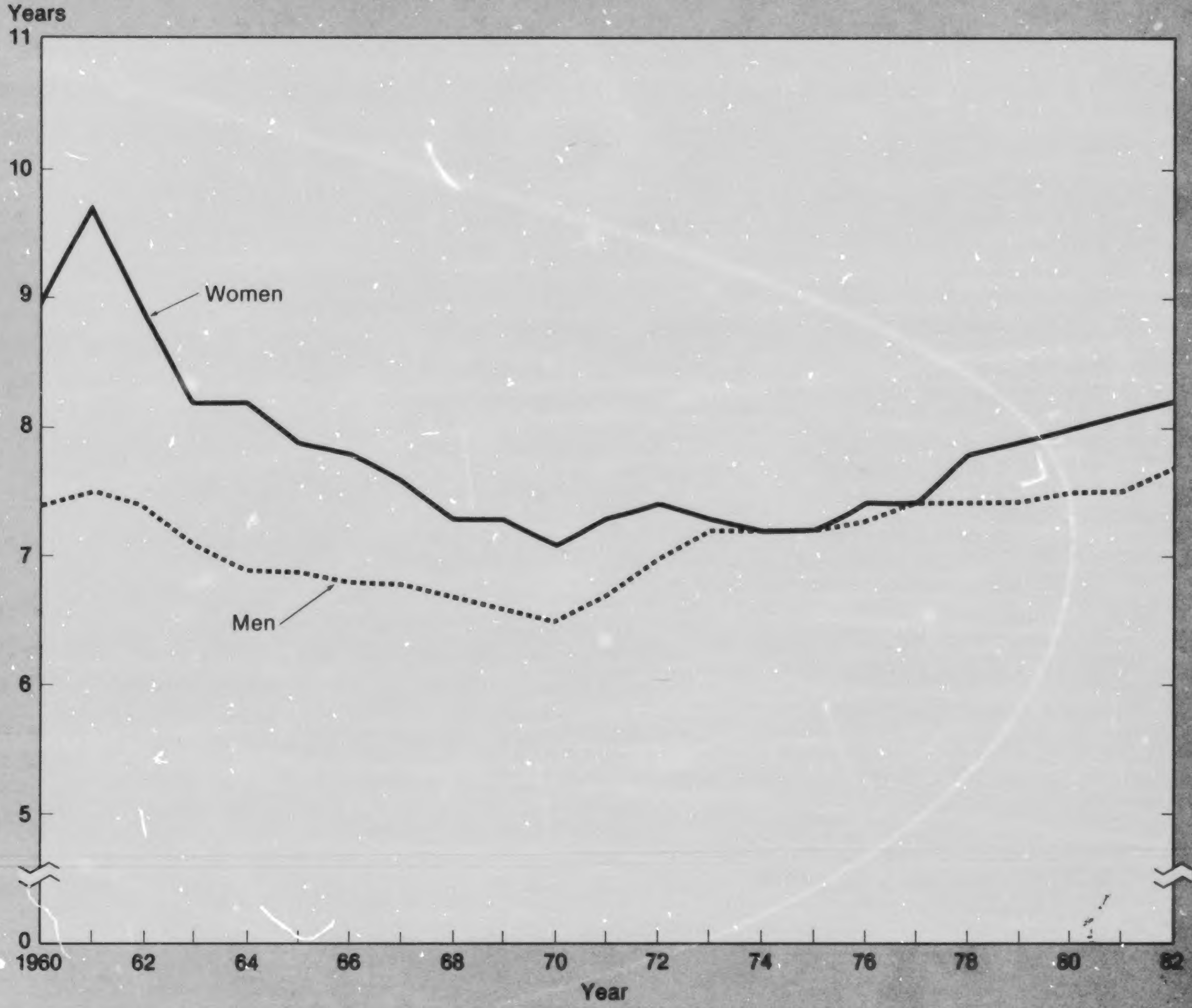


- Most science/engineering (S/E) baccalaureate recipients who go on to earn S/E doctoral degrees do so in the same field as their baccalaureate. The proportion, however, has declined in most fields since the sixties.

[a] Only doctorates whose baccalaureate-granting institution is known are included in this chart.

SOURCES: National Science Foundation and National Research Council

Chart 11. Median lapsed time between receipt of baccalaureate and science/engineering doctorate by sex



- The decline between 1960 and 1970 in the amount of time from baccalaureate to doctorate occured during a period in which the number of doctorates was increasing. It was also a period when there were national programs whose goals included reducing the time required to earn the doctorate. Changes in time lapse are influenced by the extent to which graduate students engage in full-time versus part-time study. The ability of students to pursue full-time study is affected, at least in part, by the availability of financial assistance.

SOURCES: National Science Foundation and National Research Council

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Table 1. New science and engineering doctorates by subfield and sex: 1960-82

Total, male and female

Field of study	Year of doctorate 1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	Total 1960-69	1970	1971
Total, science/engineering ...	6263	6721	7438	8219	9224	10476	11458	12982	14448	16039	103268	17743	18948
Physical sciences	1608	1747	1848	2105	2217	2490	2655	3085	3239	3428	24422	3893	3949
Physics/astronomy	530	597	710	817	866	1046	1061	1312	1436	1461	9836	1655	1738
Astronomy/astrophysics(1)	11	16	28	34	45	64	66	64	98	9	35	-	-
Astronomy(1)	-	-	-	-	-	-	-	-	-	36	36	48	59
Astrophysics(1)	-	-	-	-	-	-	-	-	-	67	67	63	54
Atomic/molecular	49	68	81	90	114	112	117	130	135	133	1029	152	124
Electromagnetism(2)	7	20	20	23	36	31	36	32	14	13	232	18	18
Mechanics(3)	1	5	5	7	5	8	5	12	5	10	63	7	6
Acoustics	11	8	7	14	7	7	10	9	10	11	94	23	19
Fluids	4	19	30	22	14	33	33	54	44	24	277	21	21
Plasma(4)	-	-	-	-	-	-	-	1	-	62	63	85	86
Optics	8	7	7	7	8	13	9	13	11	20	103	30	25
Thermal(5)	3	2	4	12	10	21	21	20	12	18	123	17	17
Elementary particles ...	51	68	115	154	147	184	164	222	232	224	1561	256	277
Nuclear physics(6)	2	2	-	-	-	-	-	-	-	-	4	-	-
Nuclear structure	115	113	151	155	148	157	157	199	197	190	1582	212	226
Solid state	136	123	161	175	212	299	303	369	390	362	2530	403	442
Theoretical physics(7) .	88	114	55	3	-	-	-	-	-	-	260	-	-
Physics, general	8	7	24	44	53	36	38	65	138	185	598	160	164
Physics, other	36	25	22	77	67	81	102	122	150	97	779	160	200
Chemistry	1078	1150	1138	1288	1351	1444	1594	1773	1803	1967	14586	2238	2211
Analytical	65	71	92	84	108	89	120	144	129	141	1043	160	174
Inorganic	96	100	98	119	148	153	165	197	232	267	1575	303	297
Organic	468	506	478	516	528	612	665	714	730	769	5986	843	810
Nuclear chemistry	13	31	24	36	31	26	27	26	29	29	272	34	36
Physical	318	310	343	366	379	427	433	480	463	461	3980	558	502
Theoretical chemistry ..	11	20	19	25	27	27	30	41	49	45	294	64	65
Agricultural/food(8)....	32	42	26	40	48	36	51	59	44	50	428	62	58
Pharmaceutical	34	37	38	50	44	48	59	64	45	51	470	58	66
Polymer(9)	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemistry, general	30	11	11	37	18	11	20	17	51	99	305	87	102
Chemistry, other	11	22	9	15	20	15	24	31	31	55	233	69	101
Earth, env & marine sciences	253	246	249	322	310	375	404	418	442	507	3526	510	552
Mineral, petrol, geochem(10)	68	78	68	94	68	99	100	91	81	8	755	-	-
Mineralogy, petrology(10)	-	-	-	-	-	-	-	-	-	50	50	57	48
Geochemistry(10)	-	-	-	-	-	-	-	-	1	40	41	40	53
Stratigraphy, sediment .	75	61	42	57	61	57	59	63	52	45	572	56	67
Paleontology	21	16	30	39	26	41	46	39	48	33	339	40	32
Structural geology	8	7	17	17	15	20	28	36	19	27	196	12	28
Geophysics	26	35	19	20	26	25	32	31	34	68	316	67	66
Geophysics, solid earth(11)	-	-	-	-	-	-	-	-	-	-	-	-	-
Geomorph/glacial geol ..	10	6	12	9	10	18	8	11	17	14	115	17	23
Hydrology/water res(12).	1	4	2	3	4	4	6	14	10	17	65	20	28
Oceanography	6	8	14	15	18	29	39	48	49	42	268	66	53
Marine sci, other(13) ..	-	-	-	-	-	-	-	-	-	-	-	-	-
Meteorology(14)	23	14	17	21	32	34	34	40	47	48	310	55	59
Atmospheric phys/chem(11)	-	-	-	-	-	-	-	-	-	-	-	-	-
Atmospheric dynamics(11)	-	-	-	-	-	-	-	-	-	-	-	-	-
Atmospheric sci, other(11)	-	-	-	-	-	-	-	-	-	-	-	-	-
Environ science, general	-	-	-	-	-	-	-	-	-	-	-	-	-
Environ science, other .	-	-	-	-	-	-	-	-	-	-	-	-	-
Applied geology(15)	15	17	22	26	30	32	28	24	38	1	233	-	-
Applied geology(15)	-	-	-	-	-	-	-	-	-	27	27	17	27
Fuel technology(15)	-	-	-	-	-	-	-	3	9	11	23	12	16
Earth science, general .	-	-	6	9	12	7	12	11	21	43	121	29	27
Earth science, other ...	-	-	0	12	8	9	12	7	16	33	97	22	25
Engineering	794	940	1216	1357	1664	2074	2301	2604	2855	3265	19070	3434	3498
Aeronaut/astronautical(16)	23	40	53	66	70	82	109	142	166	197	948	204	198
Agricultural	23	17	14	19	28	30	39	33	37	43	283	56	61
Biomedical(17)	-	-	-	-	-	-	-	-	-	37	37	45	71
Chemical	181	187	240	243	276	369	367	327	368	411	2969	445	391
Civil	62	91	125	127	193	209	237	270	301	309	1924	311	379
Ceramic	14	16	23	19	24	31	37	49	39	44	296	46	44
Computer(18)	-	-	-	-	-	-	-	-	-	-	-	-	-
Electrical	160	209	232	289	345	398	470	533	607	698	3941	706	745
Electronics	41	40	64	89	97	100	99	142	134	131	937	151	117
Industrial	14	21	21	22	28	56	46	61	74	111	454	117	134
Nuclear engineering(19).	-	-	-	-	-	-	-	-	-	120	120	118	120
Engineering mechanics ..	46	72	103	94	131	177	186	221	228	243	1501	235	213
Engineering physics(19).	26	26	41	60	79	96	131	138	126	57	780	41	38
Mechanical	98	100	148	154	183	249	271	316	369	403	2291	400	398
Metallurgy/phys met(20).	77	77	103	116	114	173	174	218	176	214	1442	222	210
Systems design(18)	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations research(21).	-	-	-	-	-	-	-	-	-	-	-	-	1
Fuel technology(22)	-	-	-	-	-	-	-	-	-	-	-	-	-
Sanitary/environmental(23)	12	24	21	24	34	35	56	37	67	55	365	55	48
Textile(24)	-	-	-	-	-	-	-	-	1	-	1	-	-
Mining(25)	-	-	-	-	-	-	-	-	-	10	10	10	15
Materials science(17) ..	-	-	-	-	-	-	-	-	-	22	22	35	52
Engineering, general ...	1	3	2	5	6	6	6	24	33	38	124	33	34
Engineering, other	16	17	26	30	56	63	73	93	129	122	625	199	229

See footnotes at end of table.

Table 1. New science and engineering doctorates by subfield and sex: 1960-82--con.

Total, male and female

Field of study	1972	1973	1974	1975	1976	1977	1978	1979	Total 1970-79	1980	1981	1982	Total 1980-82	Total 1960-82
	Year of doctorate													
Total, science/engineering ...	19009	19001	18313	18358	17864	17418	17048	17245	180947	17197	17634	17614	52445	336660
Physical sciences	3653	3444	3136	3076	2861	2721	2611	2674	32018	2521	2627	2691	7839	64279
Physics/astronomy	1634	1589	1339	1300	1237	1150	1067	1108	13817	983	1015	1013	3011	26664
Astronomy/astrophysics(1)	-	-	-	-	-	-	-	-	-	-	-	-	-	435
Astronomy(1)	63	64	57	60	78	63	64	58	614	52	50	52	154	804
Astrophysics(1)	66	67	76	71	72	57	74	57	657	69	59	50	178	902
Atomic/molecular	150	122	122	140	116	105	88	72	1191	69	66	96	231	2451
Electromagnetism(2)	11	13	8	10	12	9	10	6	115	-	-	-	-	347
Mechanics(3)	7	6	4	3	4	-	-	-	37	-	-	-	-	100
Acoustics	20	15	13	12	9	12	14	13	150	23	13	11	47	291
Fluids	28	28	20	22	20	14	13	14	201	15	14	13	42	520
Plasma(4)	93	73	57	53	75	72	68	62	724	59	65	69	193	980
Optics	31	33	24	33	50	31	33	46	336	43	54	42	139	578
Thermal(5)	18	16	16	9	4	7	11	7	122	5	7	-	12	257
Elementary particles ...	198	222	146	126	130	138	135	121	1749	117	119	118	354	3664
Nuclear physics(6)	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Nuclear structure	234	182	145	130	96	94	77	103	1499	73	63	53	189	3270
Solid state	393	400	349	321	282	258	243	243	3334	201	253	235	689	6553
Theoretical physics(7) .	-	-	-	-	-	-	-	-	-	-	-	-	-	260
Physics, general	154	206	180	173	175	173	151	194	1730	165	164	167	496	2824
Physics, other	168	142	122	137	114	117	86	112	1358	92	88	107	287	2424
Chemistry	2019	1855	1797	1776	1624	1571	1544	1566	18201	1538	1612	1678	4828	37615
Analytical	147	128	147	142	152	174	178	207	1609	185	229	190	604	3256
Inorganic	289	262	201	229	226	198	201	195	2401	189	188	220	597	4573
Organic	714	645	615	605	497	479	454	469	6131	484	494	516	1494	13611
Nuclear chemistry	22	24	31	21	25	24	13	14	244	14	12	20	46	562
Physical	472	457	389	393	355	339	310	326	4101	282	275	323	880	8961
Theoretical chemistry ..	67	53	51	46	48	38	46	50	528	47	33	32	112	934
Agricultural/food(8)....	22	9	13	8	14	6	8	11	211	-	-	-	-	639
Pharmaceutical	48	50	65	66	55	50	51	43	552	52	52	55	159	1181
Polymer(9)	-	14	35	40	42	55	57	67	310	61	62	50	173	483
Chemistry, general	133	140	197	169	144	146	161	126	1405	157	193	183	533	2243
Chemistry, other	105	73	53	57	66	62	65	58	709	67	74	89	230	1172
Earth, env & marine sciences	604	634	629	634	645	694	623	646	6171	628	583	657	1868	11565
Mineral, petrol, geochem(10)	-	-	-	-	-	-	-	-	-	-	-	-	-	755
Mineralogy, petrology(10)	61	47	41	43	48	60	34	33	472	47	30	41	118	640
Geochemistry(10)	37	42	46	49	49	57	51	57	481	51	48	51	150	672
Stratigraphy, sediment .	51	55	48	43	57	42	32	34	485	40	42	47	129	1186
Paleontology	35	44	41	41	43	26	31	36	369	21	19	24	64	772
Structural geology	24	21	15	16	22	22	28	28	216	20	27	25	72	482
Geophysics	78	67	80	92	33	-	-	-	483	-	-	-	-	799
Geophysics, solid earth(11)	-	-	-	-	40	73	60	81	254	71	72	80	223	477
Geomorph/glacial geol ..	19	27	23	30	29	22	24	14	228	15	13	21	49	392
Hydrology/water res(12).	13	30	17	18	15	23	31	20	215	27	21	24	72	352
Oceanography	78	88	81	86	89	113	98	91	843	85	70	92	247	1358
Marine sci, other(13) ..	-	-	-	-	-	9	28	31	68	25	30	41	96	164
Meteorology(14)	78	58	57	45	23	-	-	-	375	-	-	-	-	685
Atmospheric phys/chem(11)	-	-	-	-	16	15	22	16	69	19	15	17	51	120
Atmospheric dynamics(11)	-	-	-	-	14	32	21	26	93	20	27	22	69	162
Atmospheric sci, other(11)	-	-	-	-	23	46	34	42	145	51	33	26	110	255
Environ science, general	1	42	49	62	34	25	16	22	251	15	30	22	67	318
Environ science, other .	21	13	4	15	27	29	29	31	169	25	24	31	80	249
Applied geology(15)	-	-	-	-	-	-	-	-	-	-	-	-	-	233
Applied geology(15)	41	22	31	22	23	20	15	19	237	27	21	25	73	337
Fuel technology(15)	6	10	14	9	4	5	2	4	82	-	-	-	-	105
Earth science, general .	29	41	55	32	33	44	45	37	372	48	45	39	132	625
Earth science, other ...	32	27	27	31	23	31	22	24	264	21	16	29	66	427
Engineering	3503	3364	3147	3002	2834	2643	2423	2490	30338	2479	2528	2644	7651	57059
Aeronaut/astronautical(16)	181	167	148	141	122	115	103	81	1460	81	97	85	263	2671
Agricultural	67	75	52	56	37	33	43	66	546	68	64	48	180	1009
Biomedical(17)	77	71	62	76	73	75	79	69	698	68	64	59	191	926
Chemical	385	408	388	370	314	306	261	287	3555	285	296	306	887	7411
Civil	362	357	324	290	314	269	236	236	3078	240	287	308	835	5837
Ceramic	31	26	26	22	24	30	24	24	297	24	24	20	68	661
Computer(18)	-	-	-	102	119	123	76	78	498	62	71	72	205	703
Electrical	690	673	594	536	512	461	410	450	5777	405	410	469	1284	11002
Electronics	125	114	84	76	80	83	53	83	966	73	68	73	214	2117
Industrial	142	109	92	92	67	73	51	82	959	77	66	79	222	1635
Nuclear engineering(19).	117	129	111	89	134	105	107	95	1125	112	130	121	363	1608
Engineering mechanics ..	208	177	167	162	113	102	95	85	1557	91	78	103	272	3330
Engineering physics(19).	39	34	25	19	19	20	15	17	267	18	22	12	52	1099
Mechanical	408	364	377	325	304	270	282	281	3409	293	282	333	908	6608
Metallurgy/phys met(20).	175	141	138	118	111	93	98	87	1393	106	97	88	291	3126
Systems design(18)	-	-	-	79	69	71	63	73	357	61	68	49	178	535
Operations research(21).	62	104	128	89	82	76	84	67	693	63	80	58	201	894
Fuel technology(22)	-	6	16	17	17	18	19	24	117	31	21	27	79	196
Sanitary/environmental(23)	75	78	66	71	74	67	67	66	667	66	71	60	197	1229
Textile(24)	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Mining(25)	16	12	2	7	6	2	7	4	81	4	8	7	19	110
Materials science(17) ..	88	132	116	132	117	125	125	125	1047	143	113	147	403	1472
Engineering, general ...	33	37	54	38	41	33	44	32	384	42	36	32	110	618
Engineering, other	222	150	177	95	85	93	81	76	1407	66	75	88	229	2261

See footnotes at end of table.

Table 1. New science and engineering doctorates by subfield and sex: 1960-82--con.

Total, male and female

Field of study	Year of doctorate 1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	Total 1960-69	1970	1971
Mathematical sciences	291	332	388	483	588	685	769	830	971	1070	6407	1225	1238
Algebra	35	25	60	78	72	97	125	131	145	181	949	191	200
Analysis/funct anyl(26).	71	92	101	114	178	164	183	203	244	266	1616	244	261
Geometry	12	13	21	14	26	23	22	28	31	25	215	40	35
Logic	2	7	13	16	15	26	22	24	30	28	183	36	32
Number theory	11	13	19	20	20	17	20	17	20	24	181	27	33
Probability/math stat (27)	64	67	66	70	100	103	121	123	130	50	894	85	97
Topology	26	18	37	46	57	91	87	96	106	108	672	143	121
Topological algebra(28).	17	13	11	20	14	19	15	9	-	-	118	-	-
Computing theory	4	11	6	13	14	17	18	42	51	79	255	119	140
Computer science(13) ...	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations research(29).	-	-	-	-	-	-	-	-	-	-	-	-	-
Applied mathematics	31	53	42	64	68	91	111	110	133	128	831	147	122
Mathematics, general ...	13	13	10	12	13	19	20	32	52	92	276	95	108
Mathematics, other	5	7	2	16	11	18	25	15	29	89	217	98	89
Life sciences	1660	1682	1867	1976	2219	2539	2711	2966	3511	3815	24946	4165	4556
Biological sciences	1246	1244	1397	1510	1702	1963	2135	2360	2827	3092	19476	3361	3653
Biochemistry	259	274	286	303	369	393	458	501	580	553	3976	583	658
Biophysics	23	25	33	36	40	54	80	92	105	114	602	106	102
Biometry, biostatistics.	11	7	10	14	22	24	21	26	23	19	177	38	43
Anatomy	31	45	49	52	56	88	66	85	87	120	679	124	154
Cytology(30)	-	-	18	21	27	31	30	36	34	47	244	56	55
Embryology	2	1	8	15	22	20	38	37	36	38	217	41	37
Immunology(31)	-	-	-	-	-	-	-	-	-	-	-	-	-
Botany	118	116	98	108	133	143	159	130	191	188	1384	177	202
Ecology	30	32	39	45	38	35	34	55	80	89	477	112	118
Hydrobiology(8)	5	3	3	16	7	15	12	17	8	9	95	28	27
Microbiology/bacteriol(32)	184	176	199	210	194	274	288	332	361	383	2601	399	408
Animal/plant physiol(33)	122	131	54	-	-	-	-	-	-	-	307	-	-
Animal physiology(33) ..	2	2	77	136	182	193	187	240	288	321	1628	345	360
Plant physiology(33) ...	5	-	29	71	53	76	74	73	85	88	554	96	90
Nutrition(34)	23	1	1	2	-	-	-	-	-	-	27	-	-
Zoology	175	169	187	187	204	226	268	231	312	283	2242	341	355
Genetics	73	73	81	97	98	102	113	144	152	127	1060	150	153
Entomology	95	93	102	86	105	134	128	146	154	178	1223	178	218
Molecular biolo (17) ..	-	-	-	-	-	1	-	-	-	90	91	95	109
Nutrition/dietetics(11).	-	-	-	-	-	-	-	-	-	-	-	-	-
Parasitology(9)	-	-	-	-	-	-	-	-	-	-	-	-	-
Pathology	11	22	23	21	31	36	38	48	54	40	324	40	69
Pharmacology	53	49	74	71	90	99	106	115	147	154	958	150	175
Neurosciences(35)	-	-	-	-	-	-	-	-	-	-	-	-	-
Biological sci, general.	13	5	10	2	6	3	11	24	59	97	230	121	164
Biological sci, other ..	11	18	16	17	25	16	24	28	71	154	380	181	156
Agricultural sciences	414	438	470	466	517	576	576	606	684	723	5470	804	903
Agronomy	135	143	141	138	155	168	171	174	168	173	1566	198	191
Animal husbandry	107	121	113	110	123	144	143	126	140	97	1224	124	94
Food sci/technology(17).	-	-	-	-	-	-	-	-	-	39	39	37	77
Fish/wildlife	17	14	22	21	24	13	21	32	25	37	226	47	61
Forestry	25	30	36	27	46	44	46	60	74	78	466	75	84
Horticulture	47	46	55	44	57	75	71	62	63	69	589	69	75
Soils/soil science(36) .	-	-	-	-	-	-	-	-	3	37	40	41	57
Animal sci/nutrition(37)	-	-	-	-	-	-	-	-	-	1	1	-	-
Phytopathology	70	72	83	92	72	96	88	87	100	111	871	106	109
Agriculture, general ...	2	1	1	2	3	4	3	2	9	17	44	4	2
Agriculture, other	11	11	19	32	37	32	33	63	102	64	404	103	153
Social sciences	885	954	1014	1086	1213	1359	1479	1784	1966	2188	13928	2626	3010
Anthropology	69	55	81	82	83	82	97	147	138	181	1015	217	239
Archeology	8	5	6	9	10	10	12	12	17	11	100	8	18
Hist/phil of science(38)	-	-	-	-	-	-	-	-	-	-	-	-	35
Linguistics	45	46	46	45	64	71	99	92	114	116	738	137	175
Sociology	162	167	184	211	201	239	260	331	370	413	2538	505	587
Economics	341	405	403	423	512	537	600	661	717	687	5286	826	793
Econometrics	11	8	15	27	15	23	27	30	30	21	207	27	27
Agricultural economics(17)	-	-	-	-	-	-	-	-	-	92	92	114	170
Statistics(39)	-	-	-	-	-	-	-	16	21	97	134	121	133
Geography	64	50	56	58	64	71	55	75	87	115	695	137	158
Pol sci, public admin(40)	185	218	223	231	264	326	329	420	472	455	3123	534	675
Political science(40) ..	-	-	-	-	-	-	-	-	-	-	-	-	-
Psychology	772	820	856	890	1013	954	1139	1295	1464	1766	10969	1890	2145
Clinical	241	299	293	303	400	335	373	420	485	525	3674	549	622
Counseling/guidance	66	67	60	47	47	47	56	78	103	108	679	113	146
Developmental/gerontol .	22	20	26	20	19	28	43	47	62	72	359	84	114
Educational	60	75	55	35	37	34	47	59	73	75	550	88	96
School	7	15	9	17	22	16	10	31	25	33	185	45	70
Exper, compar, physiol(41)	196	171	77	3	3	4	1	2	-	-	457	-	0
Experimental(41)	-	4	110	196	222	215	268	283	295	323	1916	366	396
Comparative(41)	-	0	15	19	11	11	9	16	17	17	115	22	15
Physiological(41)	-	1	25	50	37	43	74	85	93	109	517	116	130
Human engineering(42) ..	5	4	4	1	0	0	3	0	0	-	17	-	0
Industrial/personnel ...	34	27	36	41	50	37	48	58	46	59	436	75	68
Personality	11	18	27	29	36	28	36	32	31	37	285	50	46
Psychometrics	15	20	19	15	22	17	27	15	19	19	188	18	36
Social	80	68	81	92	88	100	106	108	123	183	1029	157	172
Psychology, general	27	25	15	16	13	31	28	42	70	128	395	122	127
Psychology, other	8	6	4	6	6	8	10	19	22	78	167	85	107
Total, non-sci/engineering(43)	3470	3692	4062	4509	5101	5864	6491	7421	8488	9704	58802	11755	12919
Total, all fields	9733	10413	11500	12728	14325	16340	17949	20403	22936	25743	162070	29498	31867

See footnotes at end of table.

Table 1. New science and engineering doctorates by subfield and sex: 1960-82--con.

Total, male and female

Field of study	1972	1973	1974	1975	1976	1977	1978	1979	Total 1970-79	1980	1981	1982	Total 1980-82	Total 1960-82
							Year of doctorate							
Mathematical sciences	1281	1233	1211	1147	1003	964	959	979	11240	962	960	940	2862	20509
Algebra	167	142	125	126	116	88	87	88	1330	78	56	60	194	2473
Analysis/funct anyl(26).	241	244	208	180	141	153	118	111	1901	91	105	98	294	3811
Geometry	35	32	38	26	23	26	22	25	302	35	29	32	96	613
Logic	39	33	19	38	34	17	24	21	293	24	18	17	59	535
Number theory	36	31	23	27	26	32	18	17	270	28	24	28	80	531
Probability/math stat (27)	151	157	148	174	165	159	168	165	1469	151	163	165	479	2842
Topology	130	111	117	94	72	70	56	61	975	57	55	45	157	1804
Topological algebra(28).	-	-	-	-	-	-	-	-	-	-	-	-	-	118
Computing theory	163	225	203	166	148	101	55	25	1345	13	16	11	40	1640
Computer science(13) ...	-	1	-	-	-	31	121	210	363	218	232	220	670	1033
Operations research(29).	-	3	24	55	36	42	43	43	246	41	36	36	113	359
Applied mathematics	119	119	136	101	105	113	108	111	1181	102	118	107	327	2339
Mathematics, general ...	112	94	122	114	94	88	92	80	999	83	77	85	245	1520
Mathematics, other	88	41	48	46	43	44	47	22	566	41	31	36	108	891
Life sciences	4454	4503	4304	4402	4361	4266	4369	4501	43881	4715	4786	4840	14341	83168
Biological sciences	3600	3648	3484	3497	3573	3484	3516	3646	35462	3803	3804	3889	11496	66434
Biochemistry	585	635	599	620	617	609	607	603	6116	673	645	650	1968	12060
Biophysics	114	115	122	112	123	141	110	133	1176	108	99	91	298	2078
Biometry, biostatistics.	30	35	36	37	46	52	45	44	406	42	48	58	148	731
Anatomy	159	127	122	119	133	116	144	151	1349	147	156	162	465	2493
Cytology(30)	36	39	40	41	46	37	33	39	422	44	47	41	132	798
Embryology	35	29	22	27	13	19	15	14	252	18	20	10	48	517
Immunology(31)	18	50	69	71	93	101	94	134	630	125	148	150	423	1053
Botany	195	210	177	155	182	158	148	141	1745	144	147	146	437	3566
Ecology	134	134	149	142	140	163	170	173	1435	169	198	173	540	2452
Hydrobiology(8)	24	11	17	8	13	14	3	10	155	-	-	-	-	250
Microbiology/bacteriol(32)	397	382	382	363	362	312	349	349	3703	365	355	326	1046	7350
Animal/plant physiol(33)	-	-	-	-	-	-	-	-	-	-	-	-	-	307
Animal physiology(33) ..	343	357	313	332	285	321	315	314	3285	340	327	309	976	5889
Plant physiology(33) ...	75	92	77	67	62	43	43	57	702	52	68	56	176	1432
Nutrition(34)	-	-	-	-	-	-	-	-	-	-	-	-	-	27
Zoology	356	331	260	271	258	254	231	249	2906	226	198	198	622	5770
Genetics	160	128	126	156	143	141	126	141	1424	157	157	176	490	2974
Entomology	195	184	175	170	145	153	146	162	1726	161	143	170	474	3423
Molecular biology(17) ..	155	119	140	156	148	131	172	140	1365	183	187	224	594	2050
Nutrition/dietetics(11).	-	-	-	-	85	82	90	107	364	90	99	119	308	672
Parasitology(9)	-	19	26	18	19	17	13	21	133	22	18	14	54	187
Pathology	89	79	81	67	94	99	90	85	793	108	106	97	311	1428
Pharmacology	188	160	176	166	205	196	216	220	1852	257	280	276	813	3623
Neurosciences(35)	-	-	-	-	-	-	-	-	-	-	-	117	117	117
Biological sci, general.	137	194	191	185	190	178	191	187	1738	209	204	197	610	2578
Biological sci, other ..	175	218	184	214	171	147	165	172	1783	163	154	129	446	2609
Agricultural sciences	854	855	820	905	788	782	853	855	8419	912	982	951	2845	16734
Agronomy	142	153	132	134	146	123	137	138	1494	151	177	159	487	3547
Animal husbandry	68	35	17	21	17	25	21	26	448	25	19	22	66	1738
Food sci/technology(17).	81	92	101	111	91	107	117	107	921	102	104	110	316	1276
Fish/wildlife	49	48	54	63	55	66	61	66	570	73	66	65	204	1000
Forestry	74	79	74	86	79	66	88	87	792	80	95	78	253	1511
Horticulture	85	50	44	77	51	60	65	69	645	73	85	88	246	1480
Soils/soil science(36) .	85	102	90	97	69	72	97	71	781	79	90	83	252	1073
Animal sci/nutrition(37)	65	113	136	130	119	101	101	112	880	119	149	133	401	1282
Phytopathology	93	102	91	100	83	82	89	88	943	118	99	114	331	2145
Agriculture, general ...	5	4	5	8	9	6	6	7	56	3	5	5	13	113
Agriculture, other	104	77	76	78	69	74	71	84	889	89	93	94	276	1569
Social sciences	3234	3365	3288	3346	3277	3140	3008	2864	31138	2794	2791	2688	8273	53359
Anthropology	260	326	379	386	428	386	399	383	3403	370	369	333	1072	5490
Archeology	18	21	20	23	22	23	32	35	220	26	28	21	75	395
Hist/phil of science(38)	39	30	33	27	36	29	25	28	282	21	26	29	76	358
Linguistics	160	208	168	194	152	190	175	156	1715	182	176	191	549	3002
Sociology	639	599	645	680	734	725	610	632	6356	601	605	568	1774	10668
Economics	862	912	834	868	855	811	778	780	8319	744	808	735	2287	15892
Econometrics	33	31	19	27	30	29	23	22	268	22	17	24	63	538
Agricultural economics(17)	162	178	182	162	162	143	159	154	1586	160	168	179	507	2185
Statistics(39)	85	65	37	43	35	35	46	23	623	33	40	43	116	873
Geography	177	215	195	187	155	155	158	129	1666	130	109	106	345	2706
Pol sci, public admin(40)	799	780	775	748	40	-	-	-	4351	-	-	-	-	7474
Political science(40) ..	-	-	1	1	628	614	603	522	2369	505	445	459	1409	3778
Psychology	2280	2458	2598	2751	2883	2990	3055	3091	26141	3098	3359	3154	9611	46721
Clinical	679	746	771	810	883	936	1061	1069	8126	1106	1259	1165	3530	15330
Counseling/guidance	151	200	201	231	267	269	278	315	2171	299	352	346	997	3847
Developmental/gerontol .	135	149	162	181	190	203	208	221	1647	207	201	192	600	2606
Educational	127	115	122	134	124	136	145	163	1250	137	180	140	457	2257
School	89	109	89	103	143	148	125	125	1046	176	133	166	475	1706
Exper, compar, physiol(41)	-	-	-	-	-	-	-	-	-	-	-	-	-	457
Experimental(41)	353	333	354	351	357	337	299	293	3439	307	283	240	830	6185
Comparative(41)	21	24	23	22	28	22	20	21	218	8	11	12	31	364
Physiological(41)	121	122	118	124	133	132	126	102	1224	108	102	90	300	2041
Human engineering(42) ..	-	-	-	-	-	-	-	-	-	-	-	-	-	17
Industrial/personnel ...	55	76	80	63	73	81	74	87	732	66	87	83	236	1404
Personality	51	51	60	62	62	63	41	42	528	43	49	36	128	941
Psychometrics	25	24	24	17	27	19	15	25	230	21	27	8	56	474
Social	183	214	202	233	209	202	204	216	1992	190	180	179	549	3570
Psychology, general	133	155	250	244	218	263	299	207	2018	210	279	240	729	3162
Psychology, other	157	140	142	176	169	179	160	205	1520	220	216	257	693	2380
Total, non-sci/engineering(43)	14034	14754	14734	14593	15082	14300	13825	13990	139986	13816	13708	13434	40958	239746
Total, all fields	33043	33755	33047	32951	32946	31718	30873	31235	320933	31013	31342	31048	93403	576406

See footnotes at end of table.

Table 1. New science and engineering doctorates by subfield and sex: 1960-82--con.

Male

Field of study	Year of doctorate												
	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	Total 1960-69	1970	1971
Total, science/engineering ...	5820	6227	6901	7621	8532	9732	10549	11896	13150	14556	94984	16117	17007
Physical sciences	1551	1684	1774	2013	2119	2364	2535	2930	3064	3242	23276	3666	3718
Physics/astronomy	521	590	696	807	852	1019	1039	1275	1402	1422	9623	1610	1682
Astronomy/astrophysics(1)	11	15	27	33	42	59	63	59	89	9	407	-	-
Astronomy(1)	-	-	-	-	-	-	-	-	-	34	34	45	54
Astrophysics(1)	-	-	-	-	-	-	-	-	-	62	62	58	51
Atomic/molecular	46	66	81	89	114	106	117	128	131	130	1008	149	122
Electromagnetism(2)	7	20	20	23	36	30	35	31	14	13	229	15	18
Mechanics(3)	1	5	5	7	5	8	5	12	5	10	63	7	6
Acoustics	11	8	7	14	7	7	10	9	10	11	94	23	19
Fluids	4	17	29	21	14	32	33	52	44	23	269	20	20
Plasma(4)	-	-	-	-	-	-	-	1	0	62	63	85	85
Optics	8	7	7	7	8	13	9	13	11	18	101	30	25
Thermal(5)	2	2	4	12	10	20	20	20	12	17	119	16	17
Elementary particles ...	51	68	111	152	145	180	164	215	226	214	1526	248	265
Nuclear physics(6)	2	2	-	-	-	-	-	-	-	-	4	-	-
Nuclear structure	113	112	149	153	147	155	152	194	195	187	1557	206	218
Solid state	134	122	159	174	209	295	295	360	384	359	2491	392	428
Theoretical physics(7) .	88	114	52	3	-	-	-	-	-	-	257	-	-
Physics, general	7	7	24	43	50	35	37	62	135	150	550	156	160
Physics, other	36	25	21	76	65	79	99	119	146	93	759	157	194
Chemistry	1030	1094	1078	1206	1267	1345	1496	1655	1662	1820	13653	2056	2036
Analytical	61	66	84	78	100	85	115	131	123	131	974	151	166
Inorganic	92	89	90	112	139	143	154	176	208	244	1447	275	269
Organic	452	486	458	483	497	578	621	678	680	720	5653	787	748
Nuclear chemistry	13	29	20	35	30	23	27	26	29	27	259	32	32
Physical	304	296	326	343	355	387	408	448	420	423	3710	509	463
Theoretical chemistry ..	11	20	19	24	23	22	28	39	45	39	270	58	56
Agricultural/food(8) ...	31	41	25	35	46	35	48	54	43	46	404	50	51
Pharmaceutical	33	36	36	48	43	46	56	60	43	51	452	53	62
Polymer(9)	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemistry, general	24	10	11	34	16	11	16	15	47	90	274	78	91
Chemistry, other	9	21	9	14	18	15	23	28	24	49	210	63	98
Earth, env & marine sciences	250	244	244	318	305	374	392	412	431	487	3457	494	538
Mineral, petrol, geochem(10)	68	78	66	90	65	98	96	90	77	7	735	-	-
Mineralogy, petrology(10)	-	-	-	-	-	-	-	-	-	44	44	53	48
Geochemistry(10)	-	-	-	-	-	-	-	-	1	37	38	39	50
Stratigraphy, sediment .	74	61	41	57	61	57	57	63	52	45	568	56	63
Paleontology	20	14	28	39	26	41	44	39	46	33	330	38	30
Structural geology	8	7	17	17	15	20	28	35	18	25	190	12	27
Geophysics	26	35	19	20	26	25	31	31	34	68	315	66	65
Geophysics, solid earth(11)	-	-	-	-	-	-	-	-	-	-	-	-	-
Geomorph/glacial geol...	10	6	12	9	9	18	7	11	17	12	111	17	23
Hydrology/water res(12).	1	4	2	3	4	4	5	14	10	17	64	20	28
Oceanography	6	8	14	15	18	29	39	47	48	39	263	64	52
Marine sci, other(13) ..	-	-	-	-	-	-	-	-	-	-	-	-	-
Meteorology(14)	23	14	17	21	31	34	33	39	46	48	306	52	59
Atmospheric phys/chem(11)	-	-	-	-	-	-	-	-	-	-	-	-	-
Atmospheric dynamics(11)	-	-	-	-	-	-	-	-	-	-	-	-	-
Atmospheric sci, other(11)	-	-	-	-	-	-	-	-	-	-	-	-	-
Environ science, general	-	-	-	-	-	-	-	-	-	-	-	-	-
Environ science, other .	-	-	-	-	-	-	-	-	-	-	-	-	-
Applied geology(15)	14	17	22	26	30	32	28	24	38	1	232	-	-
Applied geology(15)	-	-	-	-	-	-	-	-	-	26	26	17	27
Fuel technology(15).....	-	-	-	-	-	-	-	3	9	11	23	11	15
Earth science, general .	-	-	6	9	12	7	12	10	19	41	116	28	27
Earth science, other ...	-	-	0	12	8	9	12	6	16	33	96	21	24
Engineering	791	936	1212	1347	1654	2067	2293	2595	2843	3255	18993	3419	3483
Aeronaut/astronautical(16)	22	40	53	63	69	82	109	142	165	197	942	202	195
Agricultural	23	17	14	19	23	30	39	33	37	43	283	56	61
Biomedical(17)	-	-	-	-	-	-	-	-	-	37	37	45	71
Chemical	181	187	239	240	274	369	365	324	365	408	2952	443	388
Civil	61	91	125	125	192	207	237	269	301	309	1917	310	378
Ceramic	14	16	22	19	24	30	37	49	38	44	293	46	44
Computer(18)	-	-	-	-	-	-	-	-	-	-	-	-	-
Electrical	159	208	232	288	342	397	468	533	607	696	3930	705	742
Electronics	41	40	[illegible]	89	96	100	99	142	134	130	934	149	116
Industrial	14	21	[illegible]	22	28	56	46	59	73	110	450	117	132
Nuclear engineering(19).	-	[illegible]	-	-	-	-	-	-	-	120	120	117	120
Engineering mechanics ..	46	71	103	94	130	176	185	220	226	243	1494	234	213
Engineering physics(19).	26	26	41	59	79	96	131	138	125	57	778	40	38
Mechanical	98	100	148	154	183	248	271	315	369	403	2289	399	398
Metallurgy/phys met(20).	77	77	102	116	114	172	172	217	175	213	1435	221	209
Systems design(18)	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations research(21).	-	-	-	-	-	-	-	-	-	-	-	-	1
Fuel technology(22)	-	-	-	-	-	-	-	-	-	-	-	-	-
Sanitary/environmental(23)	12	23	21	24	34	35	56	37	67	54	363	55	48
Textile(24)	-	-	-	-	-	-	-	-	1	0	1	0	0
Mining(25)	-	-	-	-	-	-	-	-	-	10	10	10	15
Materials science(17) ..	-	-	-	-	-	-	-	-	-	22	22	35	52
Engineering, general ...	1	3	2	5	6	6	6	24	32	38	123	39	34
Engineering, other	16	16	26	30	55	63	72	93	128	121	620	197	228

See footnotes at end of table.

Table 1. New science and engineering doctorates by subfield and sex: 1960-82--con.

Male

Field of study	1972	1973	1974	1975	1976	1977	1978	1979	Total 1970-79	1980	1981	1982	Total 1980-82	Total 1960-82
	Year of doctorate													
Total, science/engineering ...	16906	16551	15706	15522	14883	14311	13735	13662	154400	13396	13611	13479	40486	289870
Physical sciences	3404	3209	2902	2812	2617	2477	2364	2382	29551	2199	2318	2336	6853	59680
Physics/astronomy	1588	1533	1282	1230	1182	1086	1015	1035	13243	916	942	929	2787	25653
Astronomy/astrophysics(1)	-	-	-	-	-	-	-	-	-	-	-	-	-	407
Astronomy(1)	59	60	52	52	71	56	60	52	561	45	43	41	129	724
Astrophysics(1)	62	65	75	67	68	55	71	55	627	63	55	45	163	852
Atomic/molecular	147	119	118	135	114	99	86	66	1155	69	58	89	216	2379
Electromagnetism(2)	11	13	8	8	12	9	10	6	113	-	-	-	-	342
Mechanics(3)	7	5	3	3	4	-	-	-	35	-	-	-	-	98
Acoustics	20	14	13	11	9	12	14	12	147	21	11	11	43	284
Fluids	28	28	19	21	19	14	12	13	194	15	11	11	37	500
Plasma(4)	92	69	57	53	74	70	61	60	706	57	63	66	186	955
Optics	31	33	23	32	48	30	33	45	330	41	53	40	134	565
Thermal(5)	17	13	16	9	4	7	11	7	117	5	7	-	12	248
Elementary particles	192	218	135	120	124	129	132	114	1677	112	111	114	337	3540
Nuclear physics(6)	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Nuclear structure	230	175	144	127	88	90	73	99	1450	67	60	47	174	3181
Solid state	383	388	330	303	269	246	226	226	3191	187	233	216	636	6318
Theoretical physics(7)	-	-	-	-	-	-	-	-	-	-	-	-	-	257
Physics, general	148	198	171	158	168	163	143	177	1642	156	154	154	464	2686
Physics, other	161	135	118	131	110	106	83	103	1298	78	83	95	256	2313
Chemistry	1816	1676	1620	1582	1435	1391	1349	1347	16308	1283	1376	1407	4066	34027
Analytical	131	120	140	130	142	161	161	180	1482	162	199	163	524	2980
Inorganic	258	229	174	195	200	169	174	160	2103	157	153	182	492	4042
Organic	665	599	567	561	455	431	399	415	5627	410	433	438	1281	12561
Nuclear chemistry	20	23	29	20	24	18	11	13	222	13	12	17	42	523
Physical	418	404	344	341	300	298	268	273	3618	226	224	274	724	8052
Theoretical chemistry	57	48	44	37	42	33	39	47	461	40	27	26	93	824
Agricultural/food(8)	16	8	11	8	11	6	6	9	176	-	-	-	-	580
Pharmaceutical	40	44	59	57	46	45	46	37	489	37	47	44	128	1069
Polymer(9)	-	14	33	37	40	53	53	62	292	56	57	45	158	450
Chemistry, general	121	124	175	152	120	123	136	102	1222	130	168	152	450	1946
Chemistry, other	90	63	44	44	55	54	56	49	616	52	56	66	174	1000
Earth, env & marine sciences	582	607	594	604	582	635	562	588	5786	564	527	554	1645	10888
Mineral, petrol, geochem(10)	-	-	-	-	-	-	-	-	-	-	-	-	-	735
Mineralogy, petrology(10)	56	45	40	41	47	53	29	30	442	43	25	33	101	587
Geochemistry(10)	34	42	42	46	46	50	46	47	442	45	43	43	131	611
Stratigraphy, sediment	49	51	48	42	51	40	28	31	459	35	35	39	109	1136
Paleontology	34	38	38	36	36	23	25	27	325	16	18	17	51	706
Structural geology	23	20	15	15	21	21	24	26	204	19	26	19	64	458
Geophysics	75	66	76	90	31	-	-	-	469	-	-	-	-	784
Geophysics, solid earth(11)	-	-	-	-	38	66	54	76	234	69	66	74	209	463
Geomorph/glacial geol...	19	27	21	30	26	22	23	12	220	13	11	15	39	370
Hydrology/water res(12).	13	30	16	18	15	23	31	20	214	24	20	21	65	343
Oceanography	77	84	73	83	75	108	90	82	758	75	63	78	216	1267
Marine sci, other(13)	-	-	-	-	-	8	22	30	60	20	28	32	80	140
Meteorology(14)	76	57	55	43	22	-	-	-	364	-	-	-	-	670
Atmospheric phys/chem(11)	-	-	-	-	13	15	22	15	65	18	14	17	49	114
Atmospheric dynamics(11)	-	-	-	-	14	29	20	25	88	17	26	19	62	150
Atmospheric sci, other(11)	-	-	-	-	19	40	32	41	132	47	32	25	104	236
Environ science, general	1	37	44	56	28	24	14	20	224	15	27	17	59	283
Environ science, other	20	13	3	13	23	23	24	26	145	19	16	25	60	205
Applied geology(15)	-	-	-	-	-	-	-	-	-	-	-	-	-	232
Applied geology(15)	41	22	31	22	22	18	14	18	232	27	21	23	71	329
Fuel technology(15)	6	10	13	9	3	5	2	4	78	-	-	-	-	101
Earth science, general	28	39	54	32	30	40	41	36	355	44	42	34	120	591
Earth science, other	30	26	25	28	22	27	21	22	246	18	14	23	55	397
Engineering	3481	3318	3114	2950	2780	2569	2370	2428	29912	2389	2429	2520	7338	56243
Aeronaut/astronautical(16)	181	165	145	139	122	112	102	81	1444	80	97	84	261	2647
Agricultural	67	74	52	55	37	33	43	66	544	67	62	46	175	1002
Biomedical(17)	74	70	61	71	71	75	79	68	685	65	61	53	179	901
Chemical	383	404	380	366	307	297	256	279	3503	271	285	289	845	7300
Civil	361	351	321	287	310	262	230	234	3044	234	281	296	811	5772
Ceramic	30	25	24	22	24	27	24	23	289	22	23	19	64	646
Computer(18)	-	-	-	95	111	114	71	75	466	57	63	69	189	655
Electrical	686	667	591	527	505	452	399	443	5717	394	396	452	1242	10889
Electronics	124	113	84	76	80	80	52	82	956	72	68	71	211	2101
Industrial	142	107	91	90	65	68	49	77	938	70	60	73	203	1591
Nuclear engineering(19).	116	128	110	86	132	103	103	92	1107	111	124	114	349	1576
Engineering mechanics	208	173	165	160	112	99	94	84	1542	88	77	98	263	3299
Engineering physics(19).	38	33	24	19	19	20	15	16	262	18	20	12	50	1090
Mechanical	406	361	372	323	301	267	280	277	3384	289	277	321	887	6560
Metallurgy/phys met(20).	173	138	137	118	109	92	96	87	1380	99	92	85	276	3091
Systems design(18)	-	-	-	79	68	71	62	70	350	58	64	47	169	519
Operations research(21).	61	101	127	89	79	72	82	61	673	58	73	53	184	857
Fuel technology(22)	-	6	16	16	17	17	19	23	114	31	21	25	77	191
Sanitary/environmental(23)	74	75	66	69	72	66	65	64	654	61	67	55	183	1200
Textile(24)	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Mining(25)	16	12	2	7	6	2	7	4	81	4	8	6	18	109
Materials science(17)	88	129	116	127	111	119	122	118	1017	138	102	134	374	1413
Engineering, general	33	37	56	38	41	31	43	31	380	37	35	31	103	606
Engineering, other	220	149	176	91	81	90	77	73	1382	65	73	87	225	2227

See footnotes at end of table.

Table 1. New science and engineering doctorates by subfield and sex: 1960-82--con.

Male

Field of study	Year of doctorate 1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	Total 1960-69	1970	1971
Mathematical sciences	276	315	366	455	555	635	722	782	924	1014	6044	1148	1142
Algebra	35	24	54	69	64	86	115	119	128	167	861	173	181
Analysis/funct anyl(26).	67	86	96	108	169	156	171	139	235	255	1532	232	239
Geometry	12	13	21	13	24	21	20	27	28	22	201	35	29
Logic	1	7	13	16	13	22	22	22	30	25	171	34	29
Number theory	9	12	16	19	19	13	17	15	17	21	158	24	28
Probability/math stat(27)	60	62	63	63	95	98	115	116	128	50	850	76	89
Topology	25	18	35	45	54	87	84	91	102	103	644	133	112
Topological algebra(28).	17	12	11	20	14	18	15	9	-	-	116	-	-
Computing theory	3	11	6	13	14	16	17	42	51	77	250	117	137
Computer science(13) ...	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations research(29).	-	-	-	-	-	-	-	-	-	-	-	-	-
Applied mathematics	31	52	40	62	67	86	106	108	129	124	805	138	119
Mathematics, general ...	13	12	9	11	13	18	16	31	48	86	257	89	93
Mathematics, other	3	6	2	16	9	14	24	13	28	84	199	97	86
Life sciences	1510	1521	1679	1777	1992	2276	2386	2565	3028	3277	22011	3627	3896
Biological sciences	1103	1086	1216	1316	1483	1712	1818	1971	2351	2566	16622	2846	3022
Biochemistry	222	239	242	254	304	329	372	397	455	448	3262	486	537
Biophysics	20	21	29	35	38	52	76	80	99	102	552	96	92
Biometry, biostatistics.	9	6	9	13	19	22	18	18	21	18	153	30	36
Anatomy	26	34	40	44	49	77	52	70	66	98	556	98	128
Cytology(30)	-	-	10	19	21	23	17	25	25	29	169	39	29
Embryology	1	1	7	9	18	13	26	21	26	26	148	28	26
Immunology(31)	-	-	-	-	-	-	-	-	-	-	-	-	-
Botany	106	100	90	96	106	128	139	101	167	158	1191	146	171
Ecology	28	31	38	43	38	33	33	54	76	85	459	106	107
Hydrobiology(8)	5	3	3	15	7	12	12	17	8	9	91	28	24
Microbiology/bacteriol(32)	159	149	166	172	170	223	241	276	280	292	2128	325	334
Animal/plant physiol ...	115	112	48	-	-	-	-	-	-	-	275	-	-
Animal physiology(33) ..	2	1	66	117	159	160	157	203	245	276	1386	303	302
Plant physiology(33) ...	5	0	26	67	46	72	69	65	75	76	501	88	79
Nutrition(34)	17	1	1	1	-	-	-	-	-	-	20	-	-
Zoology	148	152	160	168	177	199	228	203	254	242	1931	310	299
Genetics	64	64	69	81	88	90	96	116	130	102	900	116	125
Entomology	94	90	100	84	103	132	119	137	144	162	1165	170	206
Molecular biology(17) ..	-	-	-	-	-	1	-	-	-	71	72	70	85
Nutrition/dietetics(11).	-	-	-	-	-	-	-	-	-	-	-	-	-
Parasitology(9)	-	-	-	-	-	-	-	-	-	-	-	-	-
Pathology	11	21	22	19	30	35	37	46	49	36	306	40	63
Pharmacology	51	46	68	63	83	92	95	103	124	135	860	133	153
Neurosciences(35)	-	-	-	-	-	-	-	-	-	-	-	-	-
Biological sci, general.	11	2	9	2	5	3	10	17	48	77	184	96	117
Biological sci, other ..	9	13	13	14	22	16	21	22	59	124	313	138	109
Agricultural sciences	407	435	463	461	509	564	568	594	677	711	5389	781	874
Agronomy	133	143	140	138	155	168	169	173	168	173	1560	196	186
Animal husbandry	105	119	113	109	119	139	143	123	139	95	1204	123	92
Food sci/technology(17).	-	-	-	-	-	-	-	-	-	38	38	33	66
Fish/wildlife	17	14	22	21	24	13	20	32	25	37	225	45	61
Forestry	25	30	36	27	46	44	46	59	74	78	465	75	84
Horticulture	46	46	54	43	55	72	69	62	62	67	576	65	73
Soils/soil science(36) .	-	-	-	-	-	-	-	-	3	37	40	40	54
Animal sci/nutrition(37)	-	-	-	-	-	-	-	-	-	-	-	-	-
Phytopathology	68	71	78	89	71	92	85	83	98	107	842	101	106
Agriculture, general ...	2	1	1	2	3	4	3	1	9	17	43	4	2
Agriculture, other	11	11	19	32	36	32	33	61	99	62	396	99	150
Social sciences	805	872	928	978	1100	1251	1327	1582	1729	1931	12503	2317	2615
Anthropology	58	48	69	60	69	70	75	111	102	135	797	158	174
Archeology	5	3	5	7	6	7	9	7	10	7	66	4	12
Hist/phil of science(38)	-	-	-	-	-	-	-	-	-	-	-	-	28
Linguistics	39	41	37	36	47	58	68	68	86	90	570	103	134
Sociology	134	133	155	177	171	204	220	271	297	331	2093	412	471
Economics	327	389	387	400	492	516	575	627	683	645	5041	775	739
Econometrics	11	8	15	26	14	23	25	28	29	19	198	26	26
Agricultural economics(17)	-	-	-	-	-	-	-	-	-	92	92	114	168
Statistics(39)	-	-	-	-	-	-	-	14	20	91	125	113	129
Geography	60	45	52	54	61	67	51	71	85	111	657	134	142
Pol sci, public admin(40)	171	205	208	218	240	306	304	385	417	410	2864	478	592
Political science(40) ..	-	-	-	-	-	-	-	-	-	-	-	-	-
Psychology	637	655	698	733	807	765	894	1030	1131	1350	8700	1446	1615
Clinical	190	237	232	250	299	259	280	334	355	397	2833	398	455
Counseling/guidance	54	55	50	38	39	40	45	58	84	85	548	86	110
Developmental/gerontol .	12	11	11	10	12	14	25	26	28	45	194	49	56
Educational	48	56	41	23	27	23	30	41	51	54	394	66	72
School	6	11	7	13	17	14	5	20	18	27	138	32	51
Exper, compar, physiol(41)	175	143	68	3	2	4	1	2	-	-	398	-	-
Experimental(41)	-	3	101	165	189	190	228	237	245	271	1629	296	315
Comparative(41)	-	0	14	18	8	9	8	15	15	11	98	19	14
Physiological(41)	-	1	21	44	35	38	65	73	75	90	442	96	99
Human engineering(42) ..	5	4	4	1	0	0	3	-	-	-	17	-	-
Industrial/personnel ...	32	27	36	40	48	34	47	55	44	55	418	69	64
Personality	9	14	21	22	30	21	29	27	28	24	225	40	32
Psychometrics	14	18	17	13	21	14	21	13	16	15	162	16	31
Social	62	55	59	76	66	76	79	90	99	136	798	123	129
Psychology, general	23	15	12	13	10	22	21	25	53	84	277	95	99
Psychology, other	8	5	4	4	4	7	7	14	20	56	129	61	88
Total, non-sci/engineering(43)	2871	3058	3364	3715	4232	4848	5314	6065	6854	7799	48120	9410	10264
Total, all fields	8691	9285	10265	11336	12764	14580	15863	17961	20004	22355	163104	25527	27271

See footnotes at end of table.

Table 1. New science and engineering doctorates by subfield and sex: 1960-82--con.

Male

Field of study	Year of doctorate													
	1972	1973	1974	1975	1976	1977	1978	1979	Total 1970-79	1980	1981	1982	Total 1980-82	Total 1960-82
Mathematical sciences	1185	1113	1096	1038	890	837	828	833	10110	846	822	824	2492	18646
Algebra	145	117	107	105	87	71	72	63	1121	63	42	48	153	2135
Analysis/funct anyl(26).	231	226	185	166	127	135	105	97	1743	83	97	83	263	3538
Geometry	33	28	35	22	20	24	21	20	267	33	28	30	91	559
Logic	33	30	17	34	31	13	21	20	262	22	17	17	56	489
Number theory	30	28	21	23	24	27	17	16	238	25	23	24	72	468
Probability/math stat(27)	139	139	136	159	143	138	137	134	1290	125	131	136	392	2532
Topology	123	99	102	88	66	63	52	52	890	50	44	40	134	1668
Topological algebra(28).	-	-	-	-	-	-	-	-	-	-	-	-	-	116
Computing theory	151	209	189	156	132	88	46	21	1246	13	14	11	38	1534
Computer science(13) ...	-	-	-	-	-	26	110	183	319	197	206	200	603	922
Operations research(29).	-	3	24	51	35	37	38	39	227	36	32	31	99	326
Applied mathematics	116	112	132	95	103	104	96	99	1114	93	94	97	284	2203
Mathematics, general ...	101	88	109	99	82	77	77	68	883	71	69	78	218	1358
Mathematics, other	83	34	39	40	40	34	36	21	510	35	25	29	89	798
Life sciences	3781	3714	3524	3553	3508	3423	3411	3470	35907	3565	3565	3552	10682	68600
Biological sciences	2957	2890	2745	2691	2770	2697	2623	2695	27936	2750	2717	2752	8219	52777
Biochemistry	480	506	450	473	476	474	461	445	4788	485	456	484	1425	9475
Biophysics	98	107	108	100	103	125	88	119	1036	90	89	78	257	1865
Biometry, biostatistics.	23	31	29	26	38	39	36	33	321	29	36	41	106	580
Anatomy	116	96	98	94	98	93	102	103	1026	102	108	101	311	1893
Cytology(30)	18	20	26	31	32	25	24	28	272	31	33	23	87	528
Embryology	27	19	15	18	12	12	11	7	175	11	10	7	28	351
Immunology(31)	12	38	52	50	63	68	65	86	434	84	88	92	264	698
Botany	164	160	149	122	143	126	102	103	1386	106	105	104	315	2892
Ecology	122	118	133	123	121	144	150	148	1272	133	146	131	410	2141
Hydrobiology(8)	22	10	17	6	12	13	2	7	141	-	-	-	-	232
Microbiology/bacteriol(32)	307	290	276	265	269	226	248	231	2771	247	252	235	734	5633
Animal/plant physiol ...	-	-	-	-	-	-	-	-	-	-	-	-	-	275
Animal physiology(33) ..	291	290	259	272	232	265	257	238	2709	272	247	233	752	4847
Plant physiology(33) ...	68	72	66	56	48	32	38	44	591	43	57	43	143	1235
Nutrition(34)	-	-	-	-	-	-	-	-	-	-	-	-	-	20
Zoology	312	264	217	208	215	204	183	190	2402	180	151	153	484	4817
Genetics	121	104	95	107	99	96	82	89	1034	102	95	111	308	2742
Entomology	186	168	162	162	137	135	134	151	1611	135	130	147	412	3188
Molecular biology(17) ..	103	89	95	102	105	99	118	107	973	123	118	143	384	1429
Nutrition/dietetics(11).	-	-	-	-	41	37	34	39	151	28	40	49	117	268
Parasitology(9)	-	14	22	15	17	16	12	16	112	15	13	12	40	152
Pathology	79	73	73	59	71	83	61	65	667	80	79	71	230	1203
Pharmacology	165	133	143	140	180	155	170	185	1557	197	211	200	608	3025
Neurosciences(35)	-	-	-	-	-	-	-	-	-	-	-	79	79	79
Biological sci, general.	114	148	135	132	133	124	127	137	1263	147	145	135	427	1874
Biological sci, other ..	129	140	125	130	125	106	118	124	1244	110	108	80	298	1855
Agricultural sciences	824	824	779	862	738	726	788	775	7971	815	848	800	2463	15823
Agronomy	138	151	130	132	143	120	129	129	1454	141	162	143	446	3460
Animal husbandry	67	34	17	21	16	24	21	25	440	23	19	19	61	1705
Food sci/technology(17).	73	82	52	94	70	82	92	85	759	78	76	80	234	1031
Fish/wildlife	48	46	52	62	53	64	59	64	554	66	57	58	181	960
Forestry	74	79	74	84	79	63	85	82	779	74	89	74	237	1481
Horticulture	82	49	42	75	47	56	64	60	613	65	68	69	202	1391
Soils/soil science(36) .	83	100	89	97	67	71	92	68	761	73	83	68	224	1025
Animal sci/nutrition(37)	66	109	127	121	111	97	93	104	828	106	132	116	354	1182
Phytopathology	88	94	86	95	78	71	83	69	871	104	78	87	269	1982
Agriculture, general ...	5	4	5	8	8	5	4	7	52	3	4	4	11	106
Agriculture, other	100	76	75	73	66	73	66	82	860	82	80	82	244	1500
Social sciences	2802	2849	2679	2687	2569	2468	2272	2130	25388	2046	2064	1973	6083	43974
Anthropology	188	229	254	248	271	250	236	215	2223	196	217	195	608	3628
Archeology	9	11	11	14	10	15	16	23	125	12	15	8	35	226
Hist/phil of science(38)	36	20	24	21	22	24	18	22	215	11	21	19	51	266
Linguistics	112	142	98	124	82	117	110	78	1100	107	98	101	306	1976
Sociology	501	445	460	470	511	488	386	400	4544	370	363	354	1087	7724
Economics	805	853	760	784	763	740	687	676	7584	642	708	637	1987	14672
Econometrics	32	31	18	25	29	27	21	21	256	20	16	22	58	512
Agricultural economics(17)	159	172	177	159	158	137	154	143	1541	148	155	159	462	2095
Statistics(39)	80	59	35	37	30	30	32	19	564	24	33	38	95	786
Geography	165	198	182	177	139	128	127	106	1498	113	89	87	289	2444
Pol sci, public admin(40)	715	687	660	627	32	-	-	-	3791	-	-	-	-	6655
Political science(40) ..	-	-	-	1	522	512	485	427	1947	403	349	353	1105	3052
Psychology	1671	1741	1797	1878	1937	1902	1928	1831	17746	1787	1886	1720	5393	31839
Clinical	516	526	538	550	608	595	643	645	5474	621	702	651	1974	10281
Counseling/guidance	107	140	138	162	176	179	186	177	1461	159	192	191	542	2551
Developmental/gerontol .	66	72	79	82	88	84	105	86	767	86	80	67	233	1194
Educational	82	80	83	90	79	76	90	90	808	76	103	65	244	1446
School	57	68	51	61	77	80	67	65	609	93	60	80	233	980
Exper, compar, physiol(41)	-	-	-	-	-	-	-	-	-	-	-	-	-	398
Experimental(41)	280	248	270	263	269	239	214	211	2605	209	190	143	542	4776
Comparative(41)	17	21	19	15	19	14	11	11	160	6	8	6	20	278
Physiological(41)	95	89	81	93	95	100	90	75	913	84	68	67	219	1574
Human engineering(42) ..	-	-	-	-	-	-	-	-	-	-	-	-	-	17
Industrial/personnel ...	53	70	73	53	63	68	59	67	639	50	65	60	175	1232
Personality	29	34	44	47	31	34	28	19	338	25	23	19	67	630
Psychometrics	22	19	16	16	26	15	11	19	191	11	17	7	35	388
Social	137	160	143	167	148	133	128	126	1394	112	104	94	310	2502
Psychology, general	95	114	177	156	141	164	194	120	1355	117	146	137	400	2032
Psychology, other	115	100	85	123	117	121	102	120	1032	138	128	133	399	1560
Total, non-sci/engineering(43)	10850	11119	10888	10228	10379	9549	8817	8637	100141	8211	7849	7512	23572	171833
Total, all fields	27756	27670	26594	25750	25262	23860	22552	22299	254541	21607	21460	20991	64058	461703

See footnotes at end of table.

Table 1. New science and engineering doctorates by subfield and sex: 1960-82--con.

Female

Field of study	Year of doctorate 1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	Total 1960-69	1970	1971
Total, science/engineering ...	443	494	537	598	692	744	909	1086	1298	1483	8284	1626	1941
Physical sciences	57	63	74	92	98	126	120	155	175	186	1146	227	231
Physics/astronomy	9	7	14	10	14	27	22	37	34	39	213	45	56
Astronomy/astrophysics(1)	0	1	1	1	3	5	3	5	9	0	28	-	-
Astronomy(1)	-	-	-	-	-	-	-	-	-	2	2	3	5
Astrophysics(1)	-	-	-	-	-	-	-	-	-	5	5	5	3
Atomic/molecular	3	2	0	1	0	6	0	2	4	3	21	3	2
Electromagnetism(2)	0	0	0	0	0	1	1	1	0	0	3	0	0
Mechanics(3)	0	0	0	0	0	0	0	0	0	0	0	0	0
Acoustics	0	0	0	0	0	0	0	0	0	0	0	0	0
Fluids	0	2	1	1	0	1	0	2	0	1	8	1	1
Plasma(4)	-	-	-	-	-	-	-	0	0	0	0	0	1
Optics	0	0	0	0	0	0	0	0	0	2	2	0	0
Thermal(5)	1	0	0	0	0	1	1	0	0	1	4	1	0
Elementary particles ...	0	0	4	2	2	4	0	7	6	10	35	8	12
Nuclear physics(6)	0	0	-	-	-	-	-	-	-	-	-	-	-
Nuclear structure	2	1	2	2	1	2	5	5	2	3	25	6	8
Solid state	2	1	2	1	3	4	8	9	6	3	39	11	14
Theoretical physics(7) .	0	0	3	0	-	-	-	-	-	-	3	-	-
Physics, general	1	0	0	1	3	1	1	3	3	5	18	4	4
Physics, other	0	0	1	1	2	2	3	3	4	4	20	3	6
Chemistry	48	56	60	82	84	99	98	118	141	147	933	182	175
Analytical	4	5	8	6	8	4	5	13	6	10	69	9	8
Inorganic	4	11	8	7	9	10	11	21	24	23	128	28	28
Organic	16	20	20	33	31	34	44	36	50	49	333	56	62
Nuclear chemistry	0	2	4	1	1	3	0	0	0	2	13	2	4
Physical	14	14	17	23	24	40	25	32	43	38	270	49	39
Theoretical chemistry ..	0	0	0	1	4	5	2	2	4	6	24	6	9
Agricultural/food(8) ...	1	1	1	5	2	1	3	5	1	4	24	12	7
Pharmaceutical	1	1	2	2	1	2	3	4	2	0	18	5	4
Polymer(9)	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemistry, general	6	1	0	3	2	0	4	2	4	9	31	9	11
Chemistry, other	2	1	0	1	2	0	1	3	7	6	23	6	3
Earth, env & marine sciences	3	2	5	4	5	1	12	6	11	20	69	16	14
Mineral, petrol, geochem(10)	0	0	2	4	3	1	4	1	4	1	20	-	-
Mineralogy, petrology(10)	-	-	-	-	-	-	-	-	0	6	6	4	0
Geochemistry(10)	-	-	-	-	-	-	-	-	0	3	3	1	3
Stratigraphy, sediment .	1	0	1	0	0	0	2	0	0	0	4	0	4
Paleontology	1	2	2	0	0	0	2	0	2	0	9	2	2
Structural geology	0	0	0	0	0	0	0	1	1	2	4	0	1
Geophysics	0	0	0	0	0	0	1	0	0	0	1	1	1
Geophysics, solid earth(11)	-	-	-	-	-	-	-	-	-	-	-	-	-
Geomorph/glacial geol ..	0	0	0	0	1	0	1	0	0	2	4	0	0
Hydrology/water res(12).	0	0	0	0	0	0	1	0	0	0	1	0	0
Oceanography	0	0	0	0	0	0	0	1	1	3	5	2	1
Marine sci, other(13) ..	-	-	-	-	-	-	-	-	-	-	-	-	-
Meteorology(14)	0	0	0	0	1	0	1	1	1	0	4	3	0
Atmospheric phys/chem(11)	-	-	-	-	-	-	-	-	-	-	-	-	-
Atmospheric dynamics(11)	-	-	-	-	-	-	-	-	-	-	-	-	-
Atmospheric sci, other(11)	-	-	-	-	-	-	-	-	-	-	-	-	-
Environ science, general	-	-	-	-	-	-	-	-	-	-	-	-	-
Environ science, other .	-	-	-	-	-	-	-	-	-	-	-	-	-
Applied geology(15)	1	0	0	0	0	0	0	0	0	0	1	-	-
Applied geology(15)	-	-	-	-	-	-	-	-	-	1	1	0	0
Fuel technology(15)	-	-	-	-	-	-	-	-	-	0	0	1	1
Earth science, general .	-	-	0	0	0	0	0	1	2	2	5	1	0
Earth science, other ...	-	-	0	0	0	0	0	1	0	0	1	1	1
Engineering	3	4	4	10	10	7	8	9	12	10	77	15	15
Aeronaut/astronautical(16)	1	0	0	3	1	0	0	0	1	0	6	2	3
Agricultural	0	0	0	0	0	0	0	0	0	0	0	0	0
Biomedical(17)	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical	0	0	1	3	2	0	2	3	3	3	17	2	3
Civil	1	0	0	2	1	2	0	1	0	0	7	1	1
Ceramic	0	0	1	0	0	1	0	0	1	0	3	0	0
Computer(18)	-	-	-	-	-	-	-	-	-	-	-	-	-
Electrical	1	1	0	1	3	1	2	0	0	2	11	1	3
Electronics	0	0	1	0	1	0	0	0	0	1	3	2	1
Industrial	0	0	0	0	0	0	0	2	1	1	4	0	2
Nuclear engineering(19).	-	-	-	-	-	-	-	-	-	0	0	1	0
Engineering mechanics ..	0	1	0	0	1	1	1	1	2	0	7	1	0
Engineering physics(19).	0	0	0	1	0	0	0	0	1	0	2	1	0
Mechanical	0	0	0	0	0	1	0	1	0	0	2	1	0
Metallurgy/phys met(20).	0	0	1	0	0	1	2	1	1	1	7	1	1
Systems design(18)	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations research(21).	-	-	-	-	-	-	-	-	-	-	-	-	0
Fuel technology(22)	-	-	-	-	-	-	-	-	-	-	-	-	-
Sanitary/environmental(23)	0	1	0	0	0	0	0	0	0	1	2	0	0
Mining(25)	0	0	0	0	0	0	0	0	0	0	0	0	0
Materials science(17) ..	-	-	-	-	-	-	-	-	-	0	0	0	0
Engineering, general ...	0	0	0	0	0	0	0	0	1	0	1	0	0
Engineering, other	0	1	0	0	1	0	1	0	1	1	5	2	1

See footnotes at end of table.

Table 1. New science and engineering doctorates by subfield and sex: 1960-82--con.

Female

Field of study	1972	1973	1974	1975	1976	1977	1978	1979	Total 1970-79	1980	1981	1982	Total 1980-82	Total 1960-82
	Year of doctorate													
Total, science/engineering ...	2103	2450	2607	2836	2981	3107	3313	3583	26547	3801	4023	4135	11959	46790
Physical sciences	249	235	234	264	244	244	247	292	2467	322	309	355	986	4579
Physics/astronomy	46	56	57	70	55	64	52	73	574	67	73	84	224	1011
Astronomy/astrophysics(1)	-	-	-	-	-	-	-	-	-	-	-	-	-	28
Astronomy(1)	4	4	5	8	7	7	4	6	53	7	7	11	25	80
Astrophysics(1)	4	2	1	4	4	2	3	2	30	6	4	5	15	50
Atomic/molecular	3	3	4	5	2	6	2	6	36	0	8	7	15	72
Electromagnetism(2)	0	0	0	2	0	0	0	0	2	-	-	-	-	5
Mechanics(3)	0	1	1	0	0	-	-	-	2	-	-	-	-	2
Acoustics	0	1	0	1	0	0	0	1	3	2	2	0	4	7
Fluids	0	0	1	1	1	0	1	1	7	0	3	2	5	20
Plasma(4)	1	4	0	0	1	2	7	2	18	2	2	3	7	25
Optics	0	0	1	1	2	1	0	1	6	2	1	2	5	13
Thermal(5)	1	3	0	0	0	0	0	0	5	0	0	0	0	9
Elementary particles ...	6	4	11	6	6	9	3	7	72	5	8	4	17	124
Nuclear physics(6)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nuclear structure	4	7	1	3	8	4	4	4	49	6	3	6	15	89
Solid state	10	12	19	18	13	12	17	17	143	14	20	19	53	235
Theoretical physics(7) .	-	-	-	-	-	-	-	-	-	-	-	-	-	3
Physics, general	6	8	9	15	7	10	8	17	88	9	10	13	32	138
Physics, other	7	7	4	6	4	11	3	9	60	14	5	12	31	111
Chemistry	203	179	177	194	189	180	195	219	1893	255	236	271	762	3588
Analytical	16	8	7	12	10	13	17	27	127	23	30	27	80	276
Inorganic	31	33	27	34	26	29	27	35	298	32	35	38	105	531
Organic	49	46	48	44	42	48	55	54	504	74	61	78	213	1050
Nuclear chemistry	2	1	2	1	1	6	2	1	22	1	0	3	4	39
Physical	54	53	45	52	55	41	42	53	483	56	51	49	156	909
Theoretical chemistry ..	10	5	7	9	6	5	7	3	67	7	6	6	19	110
Agricultural/food(8) ...	6	1	2	0	3	0	2	2	35	-	-	-	-	59
Pharmaceutical	8	6	6	9	9	5	5	6	63	15	5	11	31	112
Polymer(9)	-	0	2	3	2	2	4	5	18	5	5	5	15	33
Chemistry, general	12	16	22	17	24	23	25	24	183	27	25	31	83	297
Chemistry, other	15	10	9	13	11	8	9	9	93	15	18	23	56	172
Earth, env & marine sciences	22	27	35	30	63	59	61	58	385	64	56	103	223	677
Mineral, petrol, geochem(10)	-	-	-	-	-	-	-	-	-	-	-	-	-	20
Mineralogy, petrology(10)	5	2	1	2	1	7	5	3	30	4	5	8	17	53
Geochemistry(10)	3	0	4	3	3	7	5	10	39	6	5	8	19	61
Stratigraphy, sediment .	2	4	0	1	6	2	4	3	26	5	7	8	20	50
Paleontology	1	6	3	5	7	3	6	9	44	5	1	7	13	66
Structural geology	1	1	0	1	1	1	4	2	12	1	1	6	8	24
Geophysics	3	1	4	2	2	-	-	-	14	-	-	-	-	15
Geophysics, solid earth(11)	-	-	-	-	2	7	6	5	20	2	6	6	14	34
Geomorph/glacial geol ..	0	0	2	0	3	0	1	2	8	2	2	6	10	22
Hydrology/water res(12).	0	0	1	0	0	0	0	0	1	3	1	3	7	9
Oceanography	1	4	8	3	14	5	8	9	55	10	7	14	31	91
Marine sci, other(13) ..	-	-	-	-	-	1	6	1	8	5	2	9	16	24
Meteorology(14)	2	1	2	2	1	-	-	-	11	-	-	-	-	15
Atmospheric phys/chem(11)	-	-	-	-	3	0	0	1	4	1	1	-	2	6
Atmospheric dynamics(11)	-	-	-	-	0	3	1	1	5	3	1	3	7	12
Atmospheric sci, other(11)	-	-	-	-	4	6	2	1	13	4	1	1	6	19
Environ science, general	0	5	5	6	6	1	2	2	27	0	3	5	8	35
Environ science, other .	1	0	1	2	4	6	5	5	24	6	8	6	20	44
Applied geology(15)	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Applied geology(15)	0	0	0	0	1	2	1	1	5	0	0	2	2	8
Fuel technology(15)	0	0	1	0	1	0	0	0	4	-	-	-	-	4
Earth science, general .	1	2	1	0	3	4	4	1	17	4	3	5	12	34
Earth science, other ...	2	1	2	3	1	4	1	2	18	3	2	6	11	30
Engineering	22	46	33	52	54	74	53	62	426	90	99	124	313	816
Aeronaut/astronautical(16)	0	2	3	2	0	3	1	0	16	1	0	1	2	24
Agricultural	0	1	0	1	0	0	0	0	2	1	2	2	5	7
Biomedical(17)	3	1	1	5	2	0	0	1	13	3	3	6	12	25
Chemical	2	4	8	4	7	9	5	8	52	14	11	17	42	111
Civil	1	6	3	3	4	7	6	2	34	6	6	12	24	65
Ceramic	1	1	2	0	0	3	0	1	8	2	1	1	4	15
Computer(18)	-	-	-	7	8	9	5	3	32	5	8	3	16	48
Electrical	4	6	3	9	7	9	11	7	60	11	14	17	42	113
Electronics	1	1	0	0	0	3	1	1	10	1	0	2	3	16
Industrial	0	2	1	2	2	5	2	5	21	7	6	6	19	44
Nuclear engineering(19).	1	1	1	3	2	2	4	3	18	1	6	7	14	32
Engineering mechanics ..	0	4	2	2	1	3	1	1	15	3	1	5	9	31
Engineering physics(19).	1	1	1	0	0	0	0	1	5	0	2	0	2	9
Mechanical	2	3	5	2	3	3	2	4	25	4	5	12	21	48
Metallurgy/phys met(20).	2	3	1	0	2	1	2	0	13	7	5	3	15	35
Systems design(18)	-	-	-	0	1	0	1	5	7	3	4	2	9	16
Operations research(21).	1	3	1	0	3	4	2	6	20	5	7	5	17	37
Fuel technology(22)	-	0	0	1	0	1	0	1	3	0	0	2	2	5
Sanitary/environmental(23)	1	3	0	2	2	1	2	2	13	5	4	5	14	29
Mining(25)	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Materials science(17) ..	0	3	0	5	6	6	3	7	30	5	11	13	29	59
Engineering, general ...	0	0	0	0	0	2	1	1	4	5	1	1	7	12
Engineering, other	2	1	1	4	4	3	4	3	25	1	2	1	4	34

See footnotes at end of table.

Table 1. New science and engineering doctorates by subfield and sex: 1960-82--con.

Female

Field of study	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	Total 1960-69	1970	1971
	Year of doctorate												
Mathematical sciences	15	17	22	28	33	50	47	48	47	56	363	77	96
Algebra	0	1	6	9	8	11	10	12	17	14	88	18	19
Analysis/funct anyl(26).	4	6	5	6	9	8	12	14	9	11	84	12	22
Geometry	0	0	0	1	2	2	2	1	3	3	14	5	6
Logic	1	0	0	0	2	[illegible]	0	2	0	3	12	2	3
Number theory	2	1	3	1	1	4	3	2	3	3	23	3	5
Probability/math stat(27)	4	5	3	7	5	5	6	7	2	0	44	9	8
Topology	1	0	2	1	3	4	3	5	4	5	28	10	9
Topological algebra(28).	0	1	0	0	0	1	0	0	0	0	2	-	-
Computing theory	1	0	0	0	0	1	1	0	0	2	5	2	3
Computer science(13) ...	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations research(29).	-	-	-	-	-	-	-	-	-	-	-	-	-
Applied mathematics	0	1	2	2	1	5	5	2	4	4	26	9	3
Mathematics, general ...	0	1	1	1	0	1	4	1	4	6	19	6	15
Mathematics, other	2	1	0	0	2	4	1	2	1	5	18	1	3
Life sciences	150	161	188	199	227	263	325	401	483	538	2935	538	660
Biological sciences	143	158	181	194	219	251	317	389	476	526	2856	515	631
Biochemistry	37	35	44	49	65	64	86	104	125	105	714	97	121
Biophysics	3	4	4	1	2	2	4	12	6	12	50	10	10
Biometry, biostatistics.	2	1	1	1	3	2	3	8	2	1	24	8	7
Anatomy	5	11	9	8	7	11	14	15	21	22	123	26	26
Cytology(30)	-	-	8	2	6	8	13	11	9	18	75	17	26
Embryology	1	0	1	6	4	7	12	16	10	12	69	13	11
Immunology(31)	-	-	-	-	-	-	-	-	-	-	-	-	-
Botany	12	16	8	12	27	15	20	29	24	30	193	31	31
Ecology	2	1	1	2	0	2	1	1	4	4	18	6	11
Hydrobiology(8)	0	0	0	1	0	3	0	0	0	0	4	0	3
Microbiology/bacteriol(32)	25	27	33	38	24	51	47	56	81	91	473	74	74
Animal/plant physiol(33)	7	19	6	-	-	-	-	-	-	-	32	-	-
Animal physiology(33) ..	0	1	11	19	23	33	30	37	43	45	242	42	58
Plant physiology(33) ...	0	0	3	4	7	4	5	8	10	12	53	8	11
Nutrition(34)	6	0	0	1	-	-	-	-	-	-	7	-	-
Zoology	27	17	27	19	27	27	40	28	58	41	311	31	56
Genetics	9	9	12	16	10	12	17	28	22	25	160	34	28
Entomology	1	5	2	2	2	2	9	9	10	16	58	8	12
Molecular biology(17) ..	-	-	-	-	-	0	0	0	0	19	19	25	24
Nutrition/dietetics(11).	-	-	-	-	-	-	-	-	-	-	-	-	-
Parasitology(9)	-	-	-	-	-	-	-	-	-	-	-	-	-
Pathology	0	1	1	2	1	1	1	2	5	4	18	0	6
Pharmacology	2	3	6	8	7	7	11	12	23	19	98	17	22
Neurosciences(35)	0	0	0	0	0	0	0	0	0	0	0	0	0
Biological sci, general.	2	3	1	0	1	0	1	7	11	20	46	25	47
Biological sci, other ..	2	5	3	3	3	0	3	6	12	30	67	43	47
Agricultural sciences	7	3	7	5	8	12	8	12	7	12	81	23	29
Agronomy	2	0	1	0	0	0	2	1	0	0	6	2	5
Animal husbandry	2	2	0	1	4	5	0	3	1	2	20	1	2
Food sci/technology(17).	-	-	-	-	-	-	-	-	-	1	1	4	11
Fish/wildlife	0	0	0	0	0	0	1	0	0	0	1	2	0
Forestry	0	0	0	0	0	0	0	1	0	0	1	0	0
Horticulture	1	0	1	1	2	3	2	0	1	2	13	4	2
Soils/soil science(36) .	-	-	-	-	-	-	-	-	-	-	-	1	3
Animal sci/nutrition(37)	-	-	-	-	-	-	-	-	-	1	1	0	0
Phytopathology	2	1	5	3	1	4	3	4	2	4	29	5	3
Agriculture, general ...	0	0	0	0	0	0	0	1	0	0	1	0	0
Agriculture, other	0	0	0	0	1	0	0	2	3	2	8	4	3
Social sciences	80	92	86	108	113	108	152	202	237	257	1425	309	395
Anthropology	11	7	12	22	14	12	22	36	36	46	218	59	65
Archeology	3	2	1	2	4	3	3	5	7	4	34	6	6
Hist/phil of science(38)	-	-	-	-	-	-	-	-	-	-	-	-	7
Linguistics	6	5	9	9	17	13	31	24	28	26	168	34	41
Sociology	28	34	29	34	30	35	40	60	73	82	445	93	116
Economics	14	16	16	23	20	21	25	34	34	42	245	51	54
Econometrics	0	0	0	1	1	0	2	2	1	2	9	1	1
Agricultural economics(17)	-	-	-	-	-	-	-	-	-	0	0	0	2
Statistics(39)	-	-	-	-	-	-	-	2	1	6	9	8	4
Geography	4	5	4	4	3	4	4	4	2	4	38	3	16
Pol sci, public admin(40)	14	13	15	13	24	20	25	35	55	45	259	56	83
Political science(40) ..	-	-	-	-	-	-	-	-	-	-	-	-	-
Psychology	135	165	158	157	206	189	245	265	333	416	2269	444	530
Clinical	51	62	61	53	101	76	93	86	130	128	841	151	167
Counseling/guidance	12	12	10	9	8	7	11	20	19	23	131	27	36
Developmental/gerontol .	10	9	15	10	7	14	18	21	34	27	165	35	58
Educational	12	19	14	12	10	11	17	18	22	21	156	22	24
School	1	4	2	4	5	2	5	11	7	6	47	13	19
Exper, compar, physiol(41)	21	28	9	0	1	0	0	0	0	0	59	0	0
Experimental(41)	-	1	9	31	33	25	40	46	50	52	287	70	81
Comparative(41)	-	0	1	1	3	2	1	1	2	6	17	3	1
Physiological(41)	-	0	4	6	2	5	9	12	18	19	75	20	31
Industrial/personnel ...	2	0	0	1	2	3	1	3	2	4	18	6	4
Personality	2	4	6	7	6	7	7	5	3	13	60	10	14
Psychometrics	1	2	2	2	1	3	6	2	3	4	26	2	5
Social	18	13	22	16	22	24	27	18	24	47	231	36	43
Psychology, general	5	10	3	3	3	9	7	17	17	44	118	27	28
Psychology, other	0	1	0	2	2	1	3	5	2	22	38	24	19
Total, non-sci/engineering(43)	599	634	698	794	869	1016	1177	1356	1634	1905	10682	2345	2655
Total, all fields	1042	1128	1235	1392	1561	1760	2086	2442	2932	3388	18966	3971	4596

See footnotes at end of table.

Table 1. New science and engineering doctorates by subfield and sex: 1960-82--con.

Female

Field of study	1972	1973	1974	1975	1976	1977	1978	1979	Total 1970-79	1980	1981	1982	Total 1980-82	Total 1960-82
Mathematical sciences	96	120	115	109	113	127	131	146	1130	116	138	116	370	1863
Algebra	22	25	18	21	29	17	15	25	209	15	14	12	41	338
Analysis/funct anyl(26).	10	18	23	14	14	18	13	14	158	8	8	15	31	273
Geometry	2	4	3	4	3	2	1	5	35	2	1	2	5	54
Logic	6	3	2	4	3	4	3	1	31	2	1	0	3	46
Number theory	6	3	2	4	2	5	1	1	32	3	1	4	8	63
Probability/math stat(27)	12	18	12	15	22	21	31	31	179	26	32	29	87	310
Topology	7	12	15	6	6	7	4	9	85	7	11	5	23	136
Topological algebra(28).	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Computing theory	12	16	14	10	16	13	9	4	99	0	2	0	2	106
Computer science(13) ...	-	1	-	-	-	5	11	27	44	21	26	20	67	111
Operations research(29).	-	0	0	4	1	5	5	4	19	5	4	5	14	33
Applied mathematics	3	7	4	6	2	9	12	12	67	9	24	10	43	136
Mathematics, general ...	11	6	13	15	12	11	15	12	116	12	8	7	27	162
Mathematics, other	5	7	9	6	3	10	11	1	56	6	6	7	19	93
Life sciences	673	789	780	849	853	843	958	1031	7974	1150	1221	1288	3659	14568
Biological sciences	643	758	739	806	803	787	893	951	7526	1053	1087	1137	3277	13657
Biochemistry	105	129	149	147	141	135	146	158	1328	188	189	166	543	2585
Biophysics	16	8	14	12	20	16	22	14	142	18	10	13	41	233
Biometry, biostatistics.	7	4	7	11	8	13	9	11	85	13	12	17	42	151
Anatomy	43	31	24	25	35	23	42	48	323	45	48	61	154	600
Cytology(30)	18	19	14	10	14	12	9	11	150	13	14	18	45	270
Embryology	8	10	7	9	1	7	4	7	77	7	10	3	20	166
Immunology(31)	6	12	17	21	30	33	29	48	196	41	60	58	159	355
Botany	31	50	28	33	39	32	46	38	359	38	42	42	122	674
Ecology	12	16	16	19	19	19	20	25	163	36	52	42	130	311
Hydrobiology(8)	2	1	0	2	1	1	1	3	14	-	-	-	-	18
Microbiology/bacteriol(32)	90	92	106	98	93	86	101	118	932	118	103	91	312	1717
Animal/plant physiol(33)	-	-	-	-	-	-	-	-	-	-	-	-	-	32
Animal physiology(33) ..	52	67	54	60	53	56	58	76	576	68	80	76	224	1042
Plant physiology(33) ...	7	20	11	11	14	11	5	13	111	9	11	13	33	197
Nutrition(34)	-	-	-	-	-	-	-	-	-	-	-	-	-	7
Zoology	44	67	43	63	43	50	68	59	504	46	47	45	138	953
Genetics	39	24	31	49	44	45	44	52	390	55	62	65	182	732
Entomology	9	16	13	8	5	18	12	11	115	26	13	23	62	235
Molecular biology(17) ..	52	30	45	54	43	32	54	33	392	60	69	81	210	621
Nutrition/dietetics(11).	-	-	-	-	44	45	56	68	213	62	59	70	191	404
Parasitology(9)	-	5	4	3	2	1	1	5	21	7	5	2	14	35
Pathology	10	6	8	8	23	16	29	20	126	28	27	26	81	225
Pharmacology	23	27	33	26	25	41	46	35	295	60	69	76	205	598
Neurosciences(35)	-	-	-	-	-	-	-	-	-	-	-	38	38	38
Biological sci, general.	23	46	56	53	57	54	64	50	475	62	59	62	183	704
Biological sci, other ..	46	78	59	84	46	41	47	48	539	53	46	69	148	756
Agricultural sciences	30	31	41	43	50	56	65	80	448	97	134	151	382	911
Agronomy	4	2	2	2	3	3	8	9	40	10	15	16	41	87
Animal husbandry	1	1	0	0	1	1	0	1	8	2	0	3	5	33
Food sci/technology(17).	8	10	19	17	21	25	25	22	162	24	28	30	82	245
Fish/wildlife	1	2	2	1	2	2	2	2	16	7	9	7	23	40
Forestry	0	0	0	2	0	3	3	5	13	6	6	4	16	30
Horticulture	3	1	2	2	4	4	1	9	32	8	17	19	44	89
Soils/soil science(36) .	2	2	1	0	2	1	5	3	20	6	7	15	28	48
Animal sci/nutrition(37)	2	4	9	9	8	4	8	8	52	13	17	17	47	100
Phytopathology	5	8	5	5	5	11	6	19	72	14	21	27	62	163
Agriculture, general ...	0	0	0	0	1	1	2	0	4	0	1	1	2	7
Agriculture, other	4	1	1	5	3	1	5	2	29	7	13	12	32	69
Social sciences	432	516	609	659	708	672	736	734	5770	748	727	715	2190	9385
Anthropology	72	97	125	138	157	136	163	168	1180	174	152	138	464	1862
Archeology	9	10	9	9	12	8	16	12	95	14	13	13	40	169
Hist/phil of science(38)	3	10	9	6	14	5	7	6	67	10	5	10	25	92
Linguistics	45	66	70	70	70	73	65	78	615	75	78	90	243	1026
Sociology	138	154	185	210	223	237	224	232	1812	231	242	214	687	2944
Economics	57	57	74	84	92	71	91	104	735	102	100	98	300	1280
Econometrics	1	0	1	2	1	2	2	1	12	2	1	2	5	26
Agricultural economics(17)	3	6	5	3	4	6	5	11	45	12	13	20	45	90
Statistics(39)	5	6	2	6	5	5	14	4	59	9	7	5	21	89
Geography	12	17	13	10	16	27	31	23	168	17	20	19	56	262
Pol sci, public admin(40)	84	93	115	121	8	-	-	-	560	-	-	-	-	819
Political science(40) ..	-	-	1	0	106	102	118	95	422	102	96	106	304	726
Psychology	609	717	801	873	946	1088	1127	1260	8395	1311	1473	1434	4218	14852
Clinical	163	220	233	260	275	341	418	424	2652	485	557	514	1556	5049
Counseling/guidance	44	60	63	69	91	90	92	138	710	140	160	155	455	1296
Developmental/gerontol .	69	77	83	99	102	119	103	135	850	121	121	125	367	1412
Educational	45	35	39	44	45	60	55	73	442	61	77	75	213	811
School	32	41	38	42	66	68	58	60	437	83	73	86	242	726
Exper, compar, physiol(41)	-	-	-	-	-	-	-	-	-	-	-	-	-	59
Experimental(41)	73	85	84	88	88	98	85	82	834	98	93	97	288	1409
Comparative(41)	4	3	4	7	9	8	9	10	58	2	3	6	11	86
Physiological(41)	26	33	37	31	38	32	36	27	311	24	34	23	81	467
Industrial/personnel ...	2	6	7	10	10	13	15	20	93	16	22	23	61	172
Personality	22	17	16	15	31	29	13	23	190	18	26	17	61	311
Psychometrics	3	5	8	1	1	4	4	6	39	10	10	1	21	86
Social	46	54	59	66	61	69	76	90	598	78	76	85	239	1068
Psychology, general	38	41	73	88	77	99	105	87	663	93	133	103	329	1110
Psychology, other	42	40	57	53	52	58	58	85	488	82	88	124	294	820
Total, non-sci/engineering(43)	3184	3635	3846	4365	4703	4751	5008	5353	39845	5605	5659	5922	17386	67913
Total, all fields	5287	6085	6453	7201	7684	7858	8321	8936	66392	9406	9882	10057	29345	114703

See footnotes at end of table.

SOURCES: National Science Foundation and National Research Council

(1) "Astronomy/astrophysics" was included in the field taxonomy until 1969 when separate entries were introduced. The dash (-) signifies that data are not available for a given time period. For example, data for "astronomy/astrophysics" are not available after 1969, while data for "astronomy" or "astrophysics" are not available prior to 1969. A zero (0) signifies that no doctorates were produced.

(2) This subfield was originally called "Electricity and Magnetism." In 1966 the name was changed to "Electromagnetism." In 1980 this subfield was deleted from the taxonomy.

(3) "Thermal physics" was originally shown as one subfield, "Mechanics and Heat." In 1960 this subfield was separated into "Mechanics" and "Heat (Thermal)." The latter was subsequently changed to "Thermal Phenomena" in 1963 and then to "Thermal Physics" in 1967. "Mechanics" was deleted from the taxonomy in 1977.

(4) "Plasma physics" was not added until 1969.

(5) This subfield was added in 1960 under the original name of "Heat (Thermal)." See footnote 3 for more information.

(6) This subfield was deleted in 1962.

(7) This subfield was deleted in 1962, but some entries appear for 1962 and 1963 due to use of outdated forms by some institutions.

(8) This subfield was deleted in 1980.

(9) This subfield was introduced in 1973.

(10) "Mineralogy, petrology, and geochemistry" was split into two separate subfields in 1969.

(11) This subfield was introduced in 1976.

(12) This subfield was originally listed as "Hydrology." "Water Resources" was added to the title in 1977.

(13) This subfield was introduced in 1977.

(14) This subfield was deleted in 1976.

(15) In 1960 "Geophysical Engineering" and "Geological Engineering" were merged into "Geo-engineering." "Geo-engineering" became "Applied Geology, Geological Engineering, Economic Geology, and Petroleum Engineering" in 1962 and was split into "Applied Geology, Geological Engineering and Economic Geology" and "Fuel Technology and Petroleum Engineering" in 1969.

(16) This subfield was originally named "Aeronautical Engineering." In 1966 the term "Astronautical" was added.

(17) This subfield was introduced in 1969.

(18) This subfield was introduced in 1975.

(19) In 1961 "Nuclear Engineering" was deleted from the taxonomy, and previous cases were added to "Engineering Physics." In 1969 "Nuclear Engineering" was reinstated in the taxonomy.

(20) This subfield was originally specified as "Metallurgy and Metallurgical Engineering." The term "Physical" was introduced in 1967.

(21) This subfield was introduced in 1972.

(22) This subfield's full title is "Fuel Technology and Petroleum Engineering." It was added to the Engineering section of the taxonomy in 1972. (See also footnote 15.)

(23) This subfield was originally called "Sanitary Engineering." The term Environmental" was added in 1977.

(24) This subfield was deleted from the taxonomy in 1969.

(25) "Mining Engineering" was originally deleted in 1961 but was restored to the taxonomy in 1969.

(26) This subfield was specified as "Analysis" through 1967. "Functional Analysis" was added in 1968

(27) "Math Statistics" was deleted from the taxonomy in 1969 but was restored in 1972.

(28) This subfield was deleted in 1967.

(29) This subfield was introduced in 1973.

(30) This subfield was introduced in 1962.

(31) This subfield was introduced in 1972.

(32) This subfield was originally called "Microbiology." "Bacteriology" was added in 1970.

(33) In 1962 "Animal and Plant Physiology" was separated into "Animal Physiology" and "Plant Physiology."

(34) This subfield was deleted in 1960.

(35) This subfield was introduced in 1982.

(36) This subfield was added in 1969 under the name of "Range Management." In 1972 the title was changed to "Soils and Soils Science." Previous cases under "Range Management" were converted to "Agriculture, Other."

(37) This subfield was introduced as "Animal Sciences" in 1973. The title was changed to "Animal Science and Animal Nutrition" in 1977.

(38) This subfield was introduced in 1971.

(39) This subfield was introduced in 1967.

(40) "Political Science, Public Administration" was split into two separate subfields in 1976.

(41) "Experimental, Comparative and Physiological Psychology" was split into three separate subfields in 1962.

(42) This subfield was deleted from the published taxonomy in 1962 but "write-in" responses were coded until 1969. Beginning in 1969, write-responses were included with "Psychology, Other."

(43) Non-science/engineering doctorates in this table include doctorates whose field of specialization is unknown.

Table 2. New science and engineering doctorates by subfield and citizenship status: 1960-82

U.S. Citizenship

Field of study	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	Total 1960-69	1970	1971
	Year of doctorate												
Total, science/engineering ...	5261	5584	6133	6794	7494	8460	9115	10384	11632	12908	83765	14326	15123
Physical sciences	1613	1482	1578	1785	1862	2092	2173	2524	2717	2841	20467	3211	3209
Physics/astronomy	659	501	580	678	716	857	851	1046	1186	1191	8065	1337	1372
Astronomy/astrophysics(1)	8	15	26	31	36	55	51	53	82	9	366	-	-
Astronomy(1)	-	-	-	-	-	-	-	-	-	32	32	40	50
Astrophysics(1)	-	-	-	-	-	-	-	-	-	60	60	50	50
Atomic/molecular	43	61	71	84	102	101	99	112	116	114	903	133	107
Electromagnetism(2)	5	18	18	18	30	28	29	22	10	11	189	15	16
Mechanics(3)	1	3	4	6	4	7	3	10	4	8	50	5	6
Acoustics	11	7	5	12	7	6	8	8	9	10	83	23	16
Fluids	4	16	26	19	12	28	27	36	31	20	219	15	15
Plasma(4)	-	-	-	-	-	-	-	1	0	52	53	66	68
Optics	6	6	6	4	8	10	8	12	9	18	87	27	20
Thermal(5)	2	1	4	11	7	21	16	17	12	15	106	15	16
Elementary particles ...	49	56	90	117	126	145	127	168	188	186	1252	196	216
Nuclear physics(6)	1	1	-	-	-	-	-	-	-	-	2	-	-
Nuclear structure	97	93	117	120	126	124	128	160	170	166	1301	176	186
Solid state	123	107	140	157	184	243	257	307	334	310	2162	349	365
Theoretical physics(7) .	71	93	43	3	-	-	-	-	-	-	210	-	-
Physics, general	4	3	13	32	24	21	16	39	95	100	347	98	100
Physics, other	34	21	17	64	50	68	82	101	126	80	643	129	147
Chemistry	954	981	998	1107	1146	1235	1322	1478	1531	1650	12402	1874	1837
Analytical	57	63	81	77	98	81	112	129	118	134	950	161	159
Inorganic	85	87	91	113	138	136	146	182	210	236	1424	277	273
Organic	431	451	425	468	460	540	575	621	657	685	5313	745	700
Nuclear chemistry	11	27	19	32	22	22	23	20	22	21	219	28	29
Physical	285	260	302	313	329	366	362	400	385	395	3397	461	419
Theoretical chemistry ..	11	16	18	22	17	22	23	33	41	35	238	55	48
Agricultural/food(8) ...	17	25	16	26	29	22	25	29	29	32	250	33	35
Pharmaceutical	24	30	32	35	32	30	34	42	32	29	320	35	45
Polymer(9)	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemistry, general	22	4	7	8	8	3	5	2	13	43	115	48	59
Chemistry, other	11	18	7	13	13	13	17	20	24	40	176	51	70
Earth, env & marine sciences	206	209	221	254	252	305	334	333	350	388	2852	600	467
Mineral, petrol, geochem(10)	54	66	58	75	58	78	88	65	62	8	612	-	-
Mineralogy, petrology(10)	-	-	-	-	-	-	-	-	-	40	40	45	40
Geochemistry(10)	-	-	-	-	-	-	-	-	-	27	27	31	42
Stratigraphy, sediment .	67	52	37	53	54	49	54	53	45	37	501	44	61
Paleontology	20	14	27	32	24	35	37	37	43	32	301	39	29
Structural geology	5	7	17	16	13	17	24	33	18	25	175	10	27
Geophysics	17	27	17	17	20	19	22	20	25	51	235	42	51
Geophysics, solid earth(11)	-	-	-	-	-	-	-	-	-	-	-	-	-
Geomorph/glacial geol...	8	6	11	8	8	18	8	9	15	12	103	15	22
Hydrology/water res(12).	1	3	2	1	3	3	3	9	8	11	44	15	21
Oceanography	5	7	14	12	15	25	33	44	42	35	232	62	47
Marine sci, other(13) ..	-	-	-	-	-	-	-	-	-	-	-	-	-
Meteorology(14)	17	13	15	11	24	28	30	36	36	35	245	43	51
Atmospheric phys/chem(11)	-	-	-	-	-	-	-	-	-	-	-	-	-
Atmospheric dynamics(11)	-	-	-	-	-	-	-	-	-	-	-	-	-
Atmospheric sci, other(11)	-	-	-	-	-	-	-	-	-	-	-	-	-
Environ science, general	-	-	-	-	-	-	-	-	-	-	-	-	-
Environ science, other .	-	-	-	-	-	-	-	-	-	-	-	-	-
Applied geology(15)	12	14	19	17	23	21	17	16	24	1	164	-	-
Applied geology(15)	-	-	-	-	-	-	-	-	-	17	17	13	26
Fuel technology(15)	-	-	-	-	-	-	-	2	3	4	9	4	8
Earth science, general .	-	-	4	4	4	5	9	4	15	28	73	20	22
Earth science, other ...	-	-	0	8	6	7	9	5	14	25	74	17	20
Engineering	607	725	930	1042	1288	1576	1690	1926	2105	2387	14276	2514	2618
Aeronaut/astronautical(16)	18	27	43	50	51	61	77	113	129	146	715	158	145
Agricultural	18	14	9	15	20	24	35	24	23	31	213	40	42
Biomedical(17)	-	-	-	-	-	-	-	-	-	34	34	38	59
Chemical	138	156	187	198	224	298	294	257	282	303	2337	310	266
Civil	39	55	68	70	123	117	129	159	180	166	1106	166	184
Ceramic	13	15	18	16	20	28	33	44	36	39	262	41	39
Computer(18)	-	-	-	-	-	-	-	-	-	-	-	-	-
Electrical	123	164	180	223	274	310	335	393	475	541	3018	547	550
Electronics	31	27	52	77	78	81	69	109	101	99	724	120	87
Industrial	13	17	16	18	27	45	40	42	54	93	365	79	109
Nuclear engineering(19).	-	-	-	-	-	-	-	-	-	83	83	85	102
Engineering mechanics ..	29	54	73	67	104	121	132	157	160	171	1068	169	131
Engineering physics(19).	18	23	34	49	62	74	105	103	95	43	606	35	28
Mechanical	71	81	122	117	149	197	213	240	283	309	1782	316	296
Metallurgy/phys met(20).	73	58	89	97	81	140	124	167	140	150	1119	168	137
Systems design(18)	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations research(21).	-	-	-	-	-	-	-	-	-	-	-	-	-
Fuel technology(22)	-	-	-	-	-	-	-	-	-	-	-	-	-
Sanitary/environmental(23)	9	18	18	19	26	26	43	31	47	44	281	43	39
Mining(25)	-	-	-	-	-	-	-	-	-	5	5	4	4
Materials science(17) ..	-	-	-	-	-	-	-	-	-	19	19	29	31
Engineering, general ...	1	2	1	4	6	5	3	17	17	21	77	23	21
Engineering, other	13	14	20	22	43	49	58	70	83	90	462	143	148

See footnotes at end of table.

Table 2. New science and engineering doctorates by subfield and citizenship status: 1960-82--con.

U.S. Citizenship

Field of study	1972	1973	1974	1975	1976	1977	1978	1979	Total 1970-79	1980	1981	1982	Total 1980-82	Total 1960-82
	Year of doctorate													
Total, science/engineering ...	14908	14683	13458	14015	13773	13408	13086	13257	140037	13177	13299	12994	39470	263272
Physical sciences	2889	2644	2339	2317	2175	2071	1978	2040	24873	1884	1956	1984	5824	51164
Physics/astronomy	1278	1188	956	925	911	833	804	800	10404	715	721	705	2141	20610
Astronomy/astrophysics(1)	-	-	-	-	-	-	-	-	-	-	-	-	-	366
Astronomy(1)	54	52	51	50	67	59	62	48	533	45	43	48	136	701
Astrophysics(1)	53	58	67	55	61	47	61	49	556	59	53	43	155	771
Atomic/molecular	130	99	99	101	94	86	68	64	981	57	52	66	175	2059
Electromagnetism(2)	10	10	6	8	8	7	9	4	91	-	-	-	-	280
Mechanics(3)	5	4	2	2	3	-	-	-	27	-	-	-	-	77
Acoustics	17	13	12	11	9	9	13	11	132	19	10	7	36	251
Fluids	24	20	13	16	16	11	9	12	151	10	8	7	25	395
Plasma(4)	69	57	44	38	60	56	55	44	555	47	54	53	154	762
Optics	28	26	18	22	42	26	24	34	267	28	37	33	98	452
Thermal(5)	12	10	10	8	3	3	7	6	88	5	3	-	8	202
Elementary particles ...	145	159	104	96	94	100	106	92	1308	84	92	81	257	2817
Nuclear physics(6)	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Nuclear structure	195	135	108	93	69	70	57	78	1167	53	46	37	136	2604
Solid state	305	311	243	224	203	179	177	170	2526	144	181	173	498	5186
Theoretical physics(7) .	-	-	-	-	-	-	-	-	-	-	-	-	-	210
Physics, general	86	120	81	98	90	98	85	105	961	88	68	76	232	1540
Physics, other	140	114	98	103	92	84	71	83	1061	76	74	81	231	1935
Chemistry	1611	1456	1383	1392	1264	1238	1174	1240	14469	1169	1235	1279	3683	30554
Analytical	133	115	127	123	133	157	156	177	1421	156	201	163	520	2891
Inorganic	249	238	177	206	196	169	171	174	2130	160	162	183	505	4059
Organic	614	531	533	483	395	397	365	378	5141	364	396	409	1169	11623
Nuclear chemistry	17	21	24	20	19	20	11	11	200	12	11	13	36	455
Physical	380	351	296	313	282	267	238	268	3275	229	226	269	724	7396
Theoretical chemistry ..	59	41	41	35	42	28	38	41	428	40	26	24	90	756
Agricultural/food(8) ...	10	3	10	3	9	5	3	9	120	-	-	-	-	370
Pharmaceutical	27	36	48	47	34	32	28	29	361	30	39	36	105	786
Polymer(9)	-	8	15	28	26	37	34	41	189	31	27	27	85	274
Chemistry, general	57	63	76	87	81	81	79	70	701	90	92	89	271	1087
Chemistry, other	65	49	36	47	47	45	51	42	503	57	55	66	178	857
Earth, env & marine sciences	473	505	457	492	508	559	518	532	4911	512	472	528	1512	9275
Mineral, petrol, geochem(10)	-	-	-	-	-	-	-	-	-	-	-	-	-	612
Mineralogy, petrology(10)	46	36	29	30	45	54	34	31	390	45	27	37	109	539
Geochemistry(10)	27	32	37	37	39	47	46	49	387	44	45	41	130	544
Stratigraphy, sediment .	46	46	42	41	47	32	27	27	413	38	37	43	118	1032
Paleontology	27	42	37	38	39	26	29	34	340	20	19	24	63	704
Structural geology	19	18	12	15	21	19	26	22	189	19	27	23	69	433
Geophysics	56	49	55	60	18	-	-	-	331	-	-	-	-	566
Geophysics, solid earth(11)	-	-	-	-	29	55	46	65	195	46	54	59	159	354
Geomorph/glacial geol...	18	26	19	25	28	21	22	14	210	12	12	18	42	355
Hydrology/water res(12).	9	20	9	16	11	15	19	16	151	21	12	12	45	240
Oceanography	71	75	67	73	73	95	84	77	724	74	62	79	215	1171
Marine sci, other(13) ..	-	-	-	-	-	9	28	29	66	24	27	33	84	150
Meteorology(14)	63	45	42	30	14	-	-	-	288	-	-	-	-	533
Atmospheric phys/chem(11)	-	-	-	-	13	14	17	14	58	16	14	17	47	105
Atmospheric dynamics(11)	-	-	-	-	11	25	18	16	70	12	22	15	49	119
Atmospheric sci, other(11)	-	-	-	-	13	32	25	29	99	34	20	20	74	173
Environ science, general	1	38	42	54	29	21	14	19	218	12	26	18	56	274
Environ science, other .	13	12	4	11	24	25	24	25	138	22	17	27	66	204
Applied geology(15)	-	-	-	-	-	-	-	-	-	-	-	-	-	166
Applied geology(15)	31	17	17	14	16	17	13	16	180	22	15	16	53	250
Fuel technology(15)	4	3	2	1	1	1	0	1	25	0	0	0	0	34
Earth science, general .	23	27	26	23	19	33	32	30	255	36	25	24	85	413
Earth science, other ...	19	19	17	24	18	18	14	18	184	15	11	22	48	306
Engineering	2330	2142	1752	1716	1557	1472	1261	1293	18455	1255	1170	1165	3590	36321
Aeronaut/astronautical(16)	125	113	101	96	84	58	48	30	958	33	50	33	116	1789
Agricultural	45	51	21	34	21	16	21	23	314	27	18	21	66	593
Biomedical(17)	64	58	45	63	59	62	60	57	565	54	48	48	150	749
Chemical	255	239	197	190	153	160	127	139	2036	124	128	136	388	4761
Civil	191	176	130	132	124	113	91	99	1406	98	105	110	313	2825
Ceramic	21	21	19	15	12	18	19	16	221	14	11	11	36	519
Computer(18)	-	-	-	60	65	75	40	36	276	28	29	21	78	354
Electrical	474	453	338	310	293	259	214	255	3693	228	201	195	624	7335
Electronics	93	77	57	46	47	48	30	40	645	42	45	44	131	1500
Industrial	104	85	51	62	36	39	35	45	648	34	35	38	107	1120
Nuclear engineering(19).	84	94	75	59	78	67	61	60	765	57	61	58	176	1024
Engineering mechanics ..	118	102	95	86	59	58	45	40	903	42	38	48	128	2099
Engineering physics(19).	25	24	15	12	17	18	12	10	196	12	12	11	35	837
Mechanical	278	235	221	188	182	152	149	152	2169	142	120	150	412	4363
Metallurgy/phys met(20).	109	88	77	62	53	52	49	42	837	57	33	34	124	2080
Systems design(18)	-	-	-	51	44	41	31	45	212	35	32	20	87	299
Operations research(21).	41	67	89	46	53	44	48	38	426	43	40	26	109	535
Fuel technology(22)	-	-	2	5	6	5	1	4	23	8	3	8	19	62
Sanitary/environmental(23)	57	51	39	49	45	49	46	54	472	52	52	35	139	892
Mining(25)	12	4	1	3	1	1	3	2	35	1	4	5	10	50
Materials science(17) ..	52	84	54	76	56	63	71	58	574	68	55	63	186	779
Engineering, general ...	24	20	21	19	17	21	22	14	204	24	12	13	49	330
Engineering, other	158	97	104	52	50	53	38	34	977	32	38	37	107	1446

See footnotes at end of table.

Table 2. New science and engineering doctorates by subfield and citizenship status: 1960-82--con.

U.S. Citizenship

Field of study	Year of doctorate												
	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	Total 1960-69	1970	1971
Mathematical sciences	233	271	309	398	486	575	631	682	797	885	5267	1018	1009
Algebra	30	23	49	65	64	87	107	115	128	162	830	172	174
Analysis/funct anyl(26).	61	82	92	102	154	147	161	177	217	224	1417	205	221
Geometry	11	11	18	14	20	20	19	23	23	20	179	32	22
Logic	2	7	12	12	11	22	20	20	25	26	157	31	28
Number theory	8	10	14	19	18	17	15	15	15	16	147	24	25
Probability/math stat(27)	49	46	39	48	72	70	84	95	95	42	640	60	82
Topology	23	15	33	41	50	84	82	79	94	98	599	126	106
Topological algebra(28).	14	12	8	15	13	14	11	8	-	-	95	-	-
Computing theory	2	10	3	10	12	14	13	32	38	59	193	103	119
Computer science(13) ...	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations research(29).	-	-	-	-	-	-	-	-	-	-	-	-	-
Applied mathematics	21	39	34	54	58	78	90	85	109	101	669	117	94
Mathematics, general ...	7	11	5	3	3	7	9	20	28	61	154	68	67
Mathematics, other	5	5	2	15	11	15	20	13	25	76	187	80	71
Life sciences	1354	1354	1496	1603	1722	1947	2100	2325	2741	3052	19694	3359	3642
Biological sciences	1043	1016	1156	1243	1359	1570	1725	1926	2303	2571	15917	2804	3055
Biochemistry	211	210	224	252	283	302	361	389	453	424	3109	470	517
Biophysics	21	21	30	32	32	50	64	80	89	99	518	92	82
Biometry, biostatistics.	11	5	8	9	15	19	14	21	18	16	136	29	35
Anatomy	30	40	42	43	49	76	60	80	81	105	606	106	133
Cytology(30)	-	-	14	15	23	24	21	33	31	43	204	49	50
Embryology	2	1	8	12	19	13	36	36	34	37	198	39	34
Immunology(31)	-	-	-	-	-	-	-	-	-	-	-	-	-
Botany	101	93	70	86	105	112	133	111	156	165	1132	153	180
Ecology	28	29	36	39	35	32	28	50	72	82	431	100	113
Hydrobiology(8)	4	3	3	15	6	13	10	16	8	9	87	24	26
Microbiology/bacteriol(32)	159	146	175	170	155	224	235	272	303	329	2168	330	354
Animal/plant physiol(33)	107	116	44	-	-	-	-	-	-	-	267	-	-
Animal physiology(33) ..	1	0	68	120	159	172	156	203	247	287	1413	292	316
Plant physiology(33) ...	3	0	20	50	40	54	50	53	61	61	392	78	69
Nutrition(34)	13	1	-	-	-	-	-	-	-	-	14	-	-
Zoology	163	150	173	170	178	194	249	212	281	258	2028	317	329
Genetics	51	47	61	70	63	63	77	95	104	91	722	110	112
Entomology	65	76	82	65	73	105	98	105	112	135	916	141	177
Molecular biology(17) ..	-	-	-	-	-	1	-	-	-	74	75	81	98
Nutrition/dietetics(11).	-	-	-	-	-	-	-	-	-	-	-	-	-
Parasitology(9)	-	-	-	-	-	-	-	-	-	-	-	-	-
Pathology	8	20	16	18	25	26	32	32	42	32	251	28	47
Pharmacology	50	39	63	59	74	76	78	97	113	131	780	119	148
Neurosciences(35)	-	-	-	-	-	-	-	-	-	-	-	-	-
Biological sci, general.	10	4	8	2	6	2	5	18	39	71	165	101	123
Biological sci, other ..	10	15	11	16	19	12	18	23	59	122	305	145	114
Agricultural sciences	306	338	340	360	363	377	375	399	438	481	3777	555	587
Agronomy	96	103	92	106	104	97	105	116	98	99	1016	135	120
Animal husbandry	94	107	89	92	93	103	106	84	99	66	933	97	68
Food sci/technology(17).	-	-	-	-	-	-	-	-	-	25	25	24	37
Fish/wildlife	15	14	18	17	19	10	19	31	24	33	200	42	54
Forestry	20	25	29	24	31	39	39	45	53	68	373	58	69
Horticulture	32	34	36	28	38	47	35	38	44	48	380	43	68
Soils/soil science(36) .	-	-	-	-	-	-	-	-	-	17	17	19	24
Animal sci/nutrition(37)	-	-	-	-	-	-	-	-	-	1	1	-	-
Phytopathology	42	45	60	69	49	58	48	51	57	69	548	70	66
Agriculture, general ...	0	1	1	1	2	2	0	2	1	12	22	2	0
Agriculture, other	7	9	15	23	27	21	23	32	62	43	262	65	101
Social sciences	720	764	809	867	946	1060	1136	1375	1548	1713	10938	2049	2386
Anthropology	66	47	71	75	68	73	82	129	126	161	898	187	212
Archeology	7	5	6	9	9	9	10	10	15	9	89	8	14
Hist/phil of science(38)	-	-	-	-	-	-	-	-	-	-	-	-	32
Linguistics	39	35	30	33	44	50	74	68	90	85	548	102	128
Sociology	144	144	162	175	176	205	224	273	309	342	2154	419	489
Economics	255	314	313	326	376	389	428	468	517	513	3899	612	581
Econometrics	5	4	9	22	11	16	14	19	20	11	131	18	20
Agricultural economics(17)	-	-	-	-	-	-	-	-	-	59	59	77	107
Statistics(39)	-	-	-	-	-	-	-	8	10	71	89	78	96
Geography	49	38	45	44	47	59	42	60	70	84	538	105	123
Pol sci, public admin(40)	155	177	173	183	215	259	262	340	391	378	2533	443	584
Political science(40) ..	-	-	-	-	-	-	-	-	-	-	-	-	-
Psychology	728	779	790	845	938	905	1051	1219	1374	1642	10271	1775	1992
Clinical	232	289	272	290	378	325	353	404	470	508	3521	533	597
Counseling/guidance	61	64	58	47	45	45	56	74	99	100	649	108	134
Developmental/gerontol .	21	20	23	15	18	23	38	46	54	66	324	78	107
Educational	58	73	51	33	37	33	45	54	68	70	522	82	90
School	7	15	9	17	21	15	10	29	24	33	180	45	69
Exper, compar, physiol(41)	182	166	71	3	3	4	1	2	-	-	432	-	0
Experimental(41)	-	1	105	183	203	205	253	270	283	304	1807	346	376
Comparative(41)	-	0	11	18	10	9	9	16	17	15	105	20	13
Physiological(41)	-	0	25	48	32	37	66	78	87	107	480	108	122
Human engineering(42) ..	5	4	4	1	0	0	3	0	0	-	17	-	-
Industrial/personnel ...	33	26	35	40	44	35	47	55	41	54	410	70	61
Personality	10	15	23	28	34	28	34	31	30	34	267	47	42
Psychometrics	15	17	16	14	16	13	21	14	17	18	161	15	33
Social	70	59	73	87	81	95	94	98	115	171	943	134	153
Psychology, general	26	25	10	15	11	30	13	34	49	101	314	109	106
Psychology, other	8	5	4	6	5	8	8	14	20	61	139	80	89
Total, non-sci/engineering(43)	3208	3377	3708	4131	4627	5312	5859	6645	7596	8633	53096	10589	11635
Total, all fields	8469	8961	9841	10925	12121	13772	14974	17029	19228	21541	136861	24915	26758

See footnotes at end of table.

Table 2. New science and engineering doctorates by subfield and citizenship status: 1960-82--con.

U.S. Citizenship

Field of study	Year of doctorate													
	1972	1973	1974	1975	1976	1977	1978	1979	Total 1970-79	1980	1981	1982	Total 1980-82	Total 1960-82
Mathematical sciences	1030	952	876	848	768	714	704	715	8614	676	650	601	1927	15808
Algebra	145	122	98	100	92	73	72	72	1120	65	37	46	148	2098
Analysis/funct anyl(26).	207	197	160	133	114	114	91	79	1521	68	71	62	201	3139
Geometry	26	23	26	19	16	18	18	21	221	27	25	22	74	474
Logic	33	29	18	34	26	13	19	18	249	20	17	14	51	457
Number theory	32	27	19	19	22	28	16	16	228	21	20	24	65	460
Probability/math stat(27)	113	110	103	127	105	111	117	111	1039	88	101	101	290	1969
Topology	115	98	102	78	54	56	48	50	833	48	44	39	131	1563
Topological algebra(28).	-	-	-	-	-	-	-	-	-	-	-	-	-	95
Computing theory	134	174	149	119	123	83	45	21	1070	11	11	5	27	1290
Computer science(13) ...	-	1	-	-	-	24	85	163	273	156	168	143	467	740
Operations research(29).	-	3	13	37	27	24	30	31	165	24	16	19	59	224
Applied mathematics	85	80	90	79	76	83	77	72	853	73	83	71	227	1749
Mathematics, general ...	73	53	59	62	57	51	53	39	582	43	37	31	111	847
Mathematics, other	67	35	39	41	36	36	33	22	460	32	20	24	76	723
Life sciences	3527	3556	3210	3473	3497	3396	3522	3674	34856	3849	3891	3958	11698	66248
Biological sciences	2994	3014	2749	2910	2998	2909	2992	3130	29555	3279	3297	3311	9887	55359
Biochemistry	471	502	468	503	493	499	493	501	4917	589	555	547	1691	9717
Biophysics	88	85	92	85	91	106	88	107	916	84	79	72	235	1669
Biometry, biostatistics.	19	26	20	32	37	39	35	36	308	33	40	48	121	565
Anatomy	144	119	100	104	122	98	130	139	1195	133	145	143	421	2222
Cytology(30)	34	31	38	32	40	34	29	37	374	38	41	37	116	694
Embryology	33	27	20	25	11	19	15	14	237	16	19	8	43	478
Immunology(31)	15	47	53	62	74	85	80	122	538	110	137	131	378	916
Botany	163	190	136	136	158	144	124	124	1508	126	126	124	376	3016
Ecology	121	118	133	128	132	150	161	165	1321	155	183	160	498	2250
Hydrobiology(8)	23	10	16	8	13	14	3	10	147	-	-	-	-	234
Microbiology/bacteriol(32)	338	329	304	304	301	266	297	304	3127	313	303	269	885	6180
Animal/plant physiol(33)	-	-	-	-	-	-	-	-	-	-	-	-	-	267
Animal physiology(33) ..	295	316	265	293	258	275	276	287	2871	317	302	268	887	5171
Plant physiology(33) ...	57	66	54	46	46	28	34	42	520	42	53	44	139	1051
Nutrition(34)	-	-	-	-	-	-	-	-	-	-	-	-	-	14
Zoology	330	301	232	247	242	228	216	228	2670	209	179	183	571	5269
Genetics	116	93	82	122	105	118	104	119	1081	126	137	151	414	2217
Entomology	151	135	126	132	115	116	111	119	1323	120	108	128	356	2595
Molecular biology(17) ..	135	102	116	131	130	111	149	121	1174	158	169	195	522	1771
Nutrition/dietetics(11).	-	-	-	-	58	52	64	81	255	75	76	85	236	491
Parasitology(9)	-	19	19	14	17	13	10	16	108	16	14	10	40	148
Pathology	65	48	55	48	77	75	83	71	597	87	83	80	250	1098
Pharmacology	162	120	127	141	176	169	189	195	1546	222	248	248	718	3044
Neurosciences(35)	-	-	-	-	-	-	-	-	-	-	-	108	108	108
Biological sci, general.	102	151	152	149	155	145	155	147	1380	167	167	158	492	2037
Biological sci, other ..	132	179	141	168	147	125	146	145	1442	143	133	114	390	2137
Agricultural sciences	533	542	461	563	499	487	530	544	5301	570	594	647	1811	10889
Agronomy	90	90	65	73	75	67	80	76	871	81	109	100	290	2177
Animal husbandry	51	29	12	17	14	17	17	20	342	19	14	20	53	1328
Food sci/technology(17).	45	40	55	47	53	52	64	62	479	52	47	56	155	659
Fish/wildlife	48	41	45	52	50	59	53	62	506	58	62	57	177	883
Forestry	56	59	45	61	56	49	64	62	579	61	67	59	187	1139
Horticulture	42	33	21	51	29	39	37	49	392	44	43	65	152	924
Soils/soil science(36) .	40	51	38	58	31	32	54	30	377	43	44	50	137	531
Animal sci/nutrition(37)	44	76	76	83	84	69	60	71	563	83	84	96	263	827
Phytopathology	56	68	56	67	52	57	59	59	610	77	68	86	231	1389
Agriculture, general ...	3	4	0	1	4	0	3	1	18	2	1	1	4	44
Agriculture, other	58	51	48	53	51	46	39	52	564	50	55	57	162	980
Social sciences	2540	2599	2480	2617	2561	2422	2299	2153	24106	2142	2048	1891	6081	41125
Anthropology	231	289	334	345	377	338	340	330	2983	332	320	289	941	4822
Archeology	17	20	17	19	20	22	30	30	197	25	25	19	69	355
Hist/phil of science(38)	36	27	27	25	28	28	21	25	249	21	22	25	68	317
Linguistics	116	155	115	145	111	133	118	99	1222	125	117	119	361	2131
Sociology	539	498	514	556	614	619	518	534	5300	495	495	466	1456	8910
Economics	628	631	567	628	601	549	517	514	5828	488	521	430	1439	11166
Econometrics	20	20	11	13	19	16	14	14	165	14	7	13	34	330
Agricultural economics(17)	103	104	110	91	93	81	90	72	928	96	91	94	281	1268
Statistics(39)	51	33	17	20	22	17	24	9	367	20	19	15	54	510
Geography	136	170	150	154	125	117	119	105	1304	103	83	70	256	2098
Pol sci, public admin(40)	663	652	617	620	32	-	-	-	3611	-	-	-	-	6144
Political science(40) ..	-	-	1	1	519	502	508	421	1952	423	348	351	1122	3074
Psychology	2119	2285	2344	2552	2727	2774	2804	2850	24222	2859	3112	2867	8838	43331
Clinical	665	717	730	774	866	910	961	985	7738	1037	1214	1100	3351	14610
Counseling/guidance	143	192	192	219	255	260	264	301	2068	292	332	331	955	3672
Developmental/gerontol .	127	138	144	167	182	192	201	210	1546	198	195	181	574	2444
Educational	114	104	108	127	117	126	135	147	1150	126	170	131	427	2099
School	87	105	85	101	137	142	122	118	1011	172	130	158	460	1651
Exper, compar, physiol(41)	-	-	-	-	-	-	-	-	-	-	-	-	-	432
Experimental(41)	334	310	335	331	339	315	283	277	3246	287	268	223	778	5831
Comparative(41)	21	23	23	21	25	21	20	21	208	8	11	11	30	343
Physiological(41)	110	115	109	115	127	125	117	97	1145	103	96	86	285	1910
Human engineering(42) ..	-	-	-	-	-	-	-	-	-	-	-	-	-	17
Industrial/personnel ...	50	70	72	56	62	75	68	82	666	64	83	79	226	1302
Personality	45	48	58	61	57	62	39	40	499	42	48	35	125	891
Psychometrics	18	21	21	14	24	16	13	22	197	19	24	8	51	409
Social	158	194	181	205	186	191	192	204	1798	182	166	161	509	3250
Psychology, general	114	123	152	199	187	199	247	159	1595	159	201	186	546	2455
Psychology, other	133	125	134	162	163	140	142	187	1355	170	174	177	521	2015
Total, non-sci/engineering(43)	12572	13230	12885	13066	13496	12713	12204	12206	124596	12040	11754	11315	35109	212801
Total, all fields	27480	27913	26343	27081	27269	26121	25290	25463	264633	25217	23053	24309	74579	476073

See footnotes at end of table.

Table 2. New science and engineering doctorates by subfield and citizenship status: 1960-82--con.

Non-U.S. Citizenship, total

Field of study	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	Total 1960-69	1970	1971
	Year of doctorate												
Total, science/engineering ...	955	1046	1217	1293	1549	1861	2047	2349	2570	2808	17695	3238	3351
Physical sciences	184	237	249	275	311	365	403	500	458	503	3487	626	668
Physics/astronomy	65	82	116	120	118	170	169	225	217	224	1506	286	321
Astronomy/astrophysics(1)	3	1	2	3	7	9	14	8	15	0	62	-	-
Astronomy(1)	-	-	-	-	-	-	-	-	-	4	4	4	7
Astrophysics(1)	-	-	-	-	-	-	-	-	-	7	7	13	4
Atomic/molecular	4	5	10	6	12	10	16	15	19	17	114	19	17
Electromagnetism(2)	2	1	1	5	6	3	5	9	4	2	38	3	4
Mechanics(3)	0	1	1	1	1	1	2	2	1	2	12	2	0
Acoustics	0	1	2	2	0	1	2	1	1	1	11	0	5
Fluids	0	3	4	3	2	5	6	18	13	4	58	6	6
Plasma(4)	-	-	-	-	-	-	-	0	0	10	10	19	18
Optics	1	1	1	3	0	3	1	1	2	2	15	3	6
Thermal(5)	1	0	0	1	3	0	4	2	0	3	14	2	3
Elementary particles ...	2	12	24	35	20	33	36	50	44	38	292	59	61
Nuclear physics(6)	1	1	-	-	-	-	-	-	-	-	2	-	-
Nuclear structure	18	18	33	31	22	33	26	37	26	24	268	36	39
Solid state	13	13	21	17	27	55	43	62	56	52	359	53	74
Theoretical physics(7) .	17	21	12	0	-	-	-	-	-	-	50	-	-
Physics, general	1	0	0	3	5	4	2	5	13	46	79	43	37
Physics, other	2	4	5	10	13	13	14	15	23	12	111	24	42
Chemistry	119	155	133	155	193	195	234	275	241	281	1981	340	347
Analytical	7	8	10	7	10	8	8	13	11	7	89	19	15
Inorganic	11	13	7	6	10	16	17	15	21	31	147	24	23
Organic	37	55	53	47	67	71	86	89	73	84	662	92	109
Nuclear chemistry	2	2	4	4	8	4	3	6	7	8	48	6	7
Physical	33	44	40	52	48	57	62	78	76	66	556	97	80
Theoretical chemistry ..	0	4	1	3	10	4	5	8	8	10	53	9	17
Agricultural/food(8) ...	15	17	10	14	18	14	23	30	15	18	174	28	23
Pharmaceutical	10	7	6	15	12	17	21	21	12	22	143	23	20
Polymer(9)	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemistry, general	4	1	0	5	4	2	3	4	11	22	56	25	23
Chemistry, other	0	4	2	2	6	2	6	11	7	15	55	17	30
Earth, env & marine sciences	45	37	26	63	49	67	62	73	83	108	613	104	84
Mineral, petrol, geochem(10)	14	12	10	19	9	21	12	25	19	0	141	-	-
Mineralogy, petrology(10)	-	-	-	-	-	-	-	-	0	10	10	12	8
Geochemistry(10)	-	-	-	-	-	-	-	-	1	13	14	9	11
Stratigraphy, sediment .	8	9	5	4	7	8	5	10	7	8	71	11	6
Paleontology	1	2	3	5	2	6	9	1	5	1	35	1	3
Structural geology	1	0	0	1	2	3	4	3	1	2	17	1	1
Geophysics	9	8	2	3	5	5	9	11	9	16	77	24	15
Geophysics, solid earth(11)	-	-	-	-	-	-	-	-	-	-	-	-	-
Geomorph/glacial geol ..	2	0	1	1	2	0	0	2	2	2	12	2	1
Hydrology/water res(12).	0	1	0	2	1	1	3	5	1	6	20	5	7
Oceanography	1	1	0	3	3	4	4	3	7	6	32	4	6
Marine sci, other(13) ..	-	-	-	-	-	-	-	-	-	-	-	-	-
Meteorology(14)	6	1	2	9	7	5	3	4	11	13	61	12	8
Atmospheric phys/chem(11)	-	-	-	-	-	-	-	-	-	-	-	-	-
Atmospheric dynamics(11)	-	-	-	-	-	-	-	-	-	-	-	-	-
Atmospheric sci, other(11)	-	-	-	-	-	-	-	-	-	-	-	-	-
Environ science, general	-	-	-	-	-	-	-	-	-	-	-	-	-
Environ science, other .	-	-	-	-	-	-	-	-	-	-	-	-	-
Applied geology(15)	3	3	3	9	7	11	10	4	11	0	61	-	-
Applied geology(15)	-	-	-	-	-	-	-	-	0	10	10	4	1
Fuel technology(15)	-	-	-	-	-	-	-	-	6	7	13	7	8
Earth science, general .	-	-	0	5	2	1	0	3	2	7	20	7	4
Earth science, other ...	-	-	0	2	2	2	3	2	1	7	19	5	5
Engineering	183	209	278	300	356	457	529	638	709	809	4468	901	1048
Aeronaut/astronautical(16)	5	13	10	16	18	20	29	28	37	47	223	46	53
Agricultural	5	3	5	4	8	6	4	9	14	12	70	16	19
Biomedical(17)	-	-	-	-	-	-	-	-	-	3	3	7	11
Chemical	40	31	53	44	48	69	60	68	83	106	602	134	121
Civil	23	35	53	53	65	86	101	105	112	134	767	146	192
Ceramic	1	1	5	3	4	3	4	5	3	5	34	5	5
Computer(18)	-	-	-	-	-	-	-	-	-	-	-	-	-
Electrical	36	45	50	60	68	77	116	125	125	144	846	155	186
Electronics	10	12	12	12	18	19	30	32	33	31	209	31	28
Industrial	1	3	5	4	1	8	5	17	19	17	80	38	25
Nuclear engineering(19).	-	-	-	-	-	-	-	-	-	29	29	32	17
Engineering mechanics ..	17	18	30	27	27	56	52	64	67	68	426	65	81
Engineering physics(19).	8	3	7	11	16	20	24	34	31	14	168	6	10
Mechanical	27	19	25	34	32	47	42	74	82	78	460	83	102
Metallurgy/phys met(20).	4	18	14	18	30	23	35	45	34	62	283	51	70
Systems design(18)	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations research(21).	-	-	-	-	-	-	-	-	-	-	-	-	1
Fuel technology(22)	-	-	-	-	-	-	-	-	-	-	-	-	-
Sanitary/environmental(23)	3	6	3	5	8	9	13	5	20	11	83	11	9
Textile(24)	0	0	0	0	0	0	0	0	1	0	1	-	-
Mining(25)	-	-	-	-	-	-	-	-	-	5	5	6	10
Materials science(17) ..	-	-	-	-	-	-	-	-	-	3	3	6	21
Engineering, general ...	0	0	0	1	0	1	1	6	6	13	28	10	10
Engineering, other	3	2	6	8	13	13	13	21	42	27	168	55	77

See footnotes at end of table.

Table 2. New science and engineering doctorates by subfield and citizenship status: 1960-82--con.

Non-U.S. Citizenship, total

Field of study	Year of doctorate 1972	1973	1974	1975	1976	1977	1978	1979	Total 1970-79	1980	1981	1982	Total 1980-82	Total 1960-82
Total, science/engineering ...	3793	3990	4024	3988	3753	3581	3476	3533	36927	3578	3768	3877	11223	65865
Physical sciences	709	740	670	694	648	597	580	580	6512	577	589	624	1790	11789
Physics/astronomy	334	374	328	353	304	293	245	277	3115	240	256	277	773	5394
Astronomy/astrophysics(1)	-	-	-	-	-	-	-	-	-	-	-	-	-	62
Astronomy(1)	8	12	6	9	9	4	2	10	71	6	6	4	16	91
Astrophysics(1)	8	9	7	16	11	9	13	7	97	10	6	7	23	127
Atomic/molecular	20	23	23	38	22	18	20	8	208	12	13	30	55	377
Electromagnetism(2)	1	3	2	2	4	2	1	2	24	-	-	-	-	62
Mechanics(3)	2	2	2	1	1	-	-	-	10	-	-	-	-	22
Acoustics	3	2	1	1	0	3	1	2	18	4	3	4	11	40
Fluids	4	8	6	6	4	3	4	2	49	4	6	6	16	123
Plasma(4)	24	16	11	15	15	18	13	18	167	12	11	16	39	216
Optics	3	7	6	11	8	5	9	12	68	15	15	9	39	122
Thermal(5)	6	6	6	1	1	4	4	1	34	0	4	0	4	52
Elementary particles ...	53	63	42	29	36	36	29	29	437	33	27	37	97	826
Nuclear physics(6)	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Nuclear structure	39	47	37	37	27	24	20	25	331	20	17	16	53	652
Solid state	87	88	105	96	78	79	66	73	799	56	71	62	189	1347
Theoretical physics(7) .	-	-	-	-	-	-	-	-	-	-	-	-	-	50
Physics, general	50	64	54	59	66	57	48	60	538	52	64	63	179	796
Physics, other	26	24	20	32	22	31	15	28	264	16	13	23	52	427
Chemistry	375	366	342	341	344	304	335	303	3397	337	333	347	1017	6395
Analytical	14	13	20	19	19	17	20	30	186	29	28	27	86	359
Inorganic	40	23	24	23	30	28	29	21	265	29	24	36	89	501
Organic	97	112	81	120	100	82	86	91	970	118	97	105	320	1952
Nuclear chemistry	5	3	7	1	6	4	2	3	44	2	1	7	10	102
Physical	92	103	91	79	72	67	71	56	808	53	48	53	154	1516
Theoretical chemistry ..	8	12	10	11	6	10	8	9	100	7	7	8	22	175
Agricultural/food(8) ...	12	6	3	4	4	1	4	2	87	-	-	-	-	261
Pharmaceutical	21	14	14	18	21	17	20	13	181	20	12	17	49	373
Polymer(9)	-	6	19	12	16	18	23	26	120	30	35	23	88	208
Chemistry, general	48	50	56	45	52	44	58	37	438	39	63	50	152	646
Chemistry, other	38	24	17	9	18	16	14	15	198	10	18	21	49	302
Earth, env & marine sciences	122	122	148	133	128	122	90	105	1158	106	101	109	316	2087
Mineral, petrol, geochem(10)	-	-	-	-	-	-	-	-	-	-	-	-	-	161
Mineralogy, petrology(10)	15	11	11	11	3	5	0	2	78	2	3	4	9	97
Geochemistry(10)	9	9	8	11	10	9	5	8	89	6	3	9	18	121
Stratigraphy, sediment .	5	9	6	2	10	10	5	7	71	2	5	3	10	152
Paleontology	8	2	3	3	4	0	1	1	26	1	0	0	1	62
Structural geology	5	3	3	1	1	3	2	6	26	-	-	2	2	45
Geophysics	22	16	23	31	14	-	-	-	145	-	-	-	-	222
Geophysics, solid earth(11)	-	-	-	-	11	17	12	15	55	22	17	19	58	113
Geomorph/glacial geol ..	1	1	4	5	1	1	2	0	18	3	1	3	7	37
Hydrology/water res(12).	4	10	7	1	4	8	12	4	62	6	8	10	24	106
Oceanography	6	12	13	12	14	17	14	13	111	9	7	8	24	167
Marine sci, other(13) ..	-	-	-	-	-	0	0	2	2	1	3	8	12	14
Meteorology(14)	14	13	15	14	9	-	-	-	85	-	-	-	-	146
Atmospheric phys/chem(11)	-	-	-	-	3	1	5	2	11	3	1	-	4	15
Atmospheric dynamics(11)	-	-	-	-	3	7	3	10	23	8	5	7	20	43
Atmospheric sci, other(11)	-	-	-	-	9	11	6	13	39	17	13	6	36	75
Environ science, general	0	4	7	8	5	3	1	3	31	3	4	4	11	42
Environ science, other .	7	1	0	4	1	3	3	4	23	3	7	2	12	35
Applied geology(15)	-	-	-	-	-	-	-	-	-	-	-	-	-	61
Applied geology(15)	10	5	14	8	7	3	2	2	56	5	5	9	19	85
Fuel technology(15)	2	7	12	8	3	2	2	3	54	-	-	-	-	67
Earth science, general .	4	11	12	7	12	10	9	4	80	9	14	9	32	132
Earth science, other ...	10	8	10	7	4	12	6	6	73	6	5	6	17	109
Engineering	1141	1179	1219	1233	1203	1099	1093	1137	11253	1150	1243	1324	3717	19438
Aeronaut/astronautical(16)	54	52	45	44	36	55	53	50	488	45	41	48	134	845
Agricultural	21	24	27	22	15	16	22	43	225	40	46	26	112	407
Biomedical(17)	13	13	17	12	12	12	17	12	126	12	15	10	37	166
Chemical	127	161	182	176	150	142	129	144	1466	153	155	151	459	2527
Civil	170	177	157	149	175	153	137	128	1582	136	169	185	490	2839
Ceramic	10	5	4	7	12	11	5	6	70	10	13	8	31	135
Computer(18)	-	-	-	42	51	48	36	41	218	34	41	50	125	343
Electrical	209	210	203	217	204	181	177	182	1924	160	185	239	584	3354
Electronics	32	37	27	30	32	35	23	43	318	31	22	29	82	609
Industrial	38	20	35	28	30	31	16	32	293	38	27	39	104	477
Nuclear engineering(19).	31	35	33	28	53	33	44	33	339	50	63	57	170	538
Engineering mechanics ..	89	74	69	76	54	43	46	43	640	45	37	54	136	1202
Engineering physics(19).	14	9	10	7	2	2	3	7	70	4	10	1	15	253
Mechanical	126	126	145	131	120	106	129	126	1194	144	151	170	465	2119
Metallurgy/phys met(20).	66	50	56	56	57	40	47	46	537	47	61	46	154	974
Systems design(18)	-	-	-	28	25	28	31	27	139	26	34	27	87	226
Operations research(21).	20	35	38	43	29	29	35	28	258	20	40	30	90	348
Fuel technology(22)	-	5	8	10	11	13	18	18	83	23	16	15	54	137
Sanitary/environmental(23)	18	27	26	22	28	18	19	12	190	14	18	23	55	328
Textile(24)	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Mining(25)	4	8	1	3	5	1	4	2	44	3	3	1	7	56
Materials science(17) ..	36	46	55	48	54	56	53	65	440	71	53	67	191	634
Engineering, general ...	4	14	18	13	18	11	13	13	124	11	11	5	27	179
Engineering, other	59	51	63	41	30	35	36	38	485	33	32	43	108	741

See footnotes at end of table.

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Table 2. New science and engineering doctorates by subfield and citizenship status: 1960-82--con.

Non-U.S. Citizenship, total

Field of study	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	Total 1960-69	1970	1971
	Year of doctorate												
Mathematical sciences	55	52	75	75	92	95	122	129	156	166	1017	192	217
Algebra	5	2	11	13	8	10	18	15	17	19	118	19	26
Analysis/funct anyl(26).	10	9	9	11	23	17	21	26	27	42	195	38	40
Geometry	1	2	3	0	6	3	3	5	7	5	35	8	13
Logic	0	0	1	4	4	4	2	3	5	1	24	5	4
Number theory	3	3	5	1	2	0	5	2	5	8	34	3	8
Probability/math stat(27)	15	20	26	22	26	30	35	26	34	8	242	23	15
Topology	3	3	4	4	7	7	5	17	12	10	72	17	15
Topological algebra(28).	3	1	3	5	1	5	4	1	-	-	23	-	-
Computing theory	2	1	3	3	2	3	5	7	12	20	58	16	21
Computer science(13) ...	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations research(29).	-	-	-	-	-	-	-	-	-	-	-	-	-
Applied mathematics	9	8	8	10	10	12	19	24	23	23	146	24	27
Mathematics, general ...	4	1	2	1	3	3	1	2	11	17	45	22	31
Mathematics, other	0	2	0	1	0	1	4	1	3	13	25	17	17
Life sciences	295	310	356	357	462	565	570	602	730	718	4965	778	833
Biological sciences	188	212	226	255	310	373	380	398	493	481	3316	532	520
Biochemistry	44	62	61	50	80	86	87	105	122	124	821	108	129
Biophysics	2	4	3	4	7	4	16	9	15	11	75	14	15
Biometry, biostatistics.	0	2	2	5	7	5	7	5	5	3	41	9	7
Anatomy	1	5	6	9	7	12	5	5	6	15	71	15	17
Cytology(30)	-	-	4	5	4	7	9	3	3	4	39	7	4
Embryology	0	0	0	2	3	6	1	1	2	1	16	2	3
Immunology(31)	-	-	-	-	-	-	-	-	-	-	-	-	-
Botany	17	19	26	21	23	29	24	16	33	20	228	24	22
Ecology	2	3	3	6	3	3	6	5	8	7	46	12	5
Hydrobiology(8)	1	0	0	1	1	2	2	1	0	0	8	4	1
Microbiology/bacteriol(32)	25	29	23	38	34	50	52	58	54	53	416	68	45
Animal/plant physiol(33)	12	15	9	-	-	-	-	-	-	-	36	-	-
Animal physiology(33) ..	1	0	7	15	22	19	27	34	41	31	197	48	42
Plant physiology(33) ...	2	0	9	21	13	22	24	19	24	27	161	18	21
Nutrition(34)	10	0	1	2	-	-	-	-	-	-	13	-	-
Zoology	11	16	12	15	17	29	17	14	31	24	186	24	24
Genetics	22	24	19	27	34	39	35	48	47	33	328	38	41
Entomology	29	19	20	19	31	25	30	38	42	41	294	37	40
Molecular biology(17) ..	-	-	-	-	-	-	-	-	-	15	15	14	11
Nutrition/dietetics(11).	-	-	-	-	-	-	-	-	-	-	-	-	-
Parasitology(9)	-	-	-	-	-	-	-	-	-	-	-	-	-
Pathology	3	1	7	3	6	10	6	16	12	8	72	12	17
Pharmacology	2	10	9	11	15	20	27	17	32	22	165	29	23
Neurosciences(35)	-	-	-	-	-	-	-	-	-	-	-	-	-
Biological sci, general.	3	0	0	0	0	1	0	1	6	12	23	16	26
Biological sci, other ..	1	3	5	1	3	4	5	3	10	30	65	33	27
Agricultural sciences	107	98	130	102	152	192	190	204	237	237	1649	246	313
Agronomy	39	40	49	31	51	69	60	58	70	73	540	63	71
Animal husbandry	13	14	24	16	30	39	35	39	41	30	281	25	25
Food sci/technology(17).	-	-	-	-	-	-	-	-	-	14	14	13	40
Fish/wildlife	1	0	4	4	5	3	2	1	1	4	25	5	7
Forestry	5	5	7	3	15	4	7	15	20	10	91	16	15
Horticulture	15	10	19	16	19	27	36	24	19	20	205	26	27
Soils/soil science(36) .	-	-	-	-	-	-	-	-	-	19	19	22	33
Animal sci/nutrition(37)	-	-	-	-	-	-	-	-	-	-	-	-	-
Phytopathology	28	27	23	23	22	37	38	36	42	42	318	36	42
Agriculture, general ...	2	0	0	1	1	2	3	0	7	5	21	2	1
Agriculture, other	4	2	4	8	9	11	9	31	37	20	135	38	52
Social sciences	152	169	177	186	214	271	295	350	360	412	2586	538	580
Anthropology	3	8	7	5	10	7	14	13	10	16	93	23	23
Archeology	1	0	0	0	1	1	2	2	2	1	10	0	4
Hist/phil of science(38)	-	-	-	-	-	-	-	-	-	-	-	-	3
Linguistics	6	10	15	12	18	20	22	22	21	27	173	34	42
Sociology	16	20	17	31	19	32	33	47	48	58	321	83	91
Economics	82	84	79	82	112	136	147	172	184	155	1233	203	203
Econometrics	6	4	6	5	4	7	12	11	10	9	74	9	7
Agricultural economics (17)	-	-	-	-	-	-	-	-	-	33	33	37	62
Statistics(39)	-	-	-	-	-	-	-	6	10	24	40	43	35
Geography	14	11	11	12	16	11	13	15	16	29	148	29	35
Pol sci, public admin(40)	24	32	42	39	34	57	52	62	59	60	461	77	75
Political science(40) ..	-	-	-	-	-	-	-	-	-	-	-	-	-
Psychology	41	32	56	37	65	41	66	57	74	90	559	99	121
Clinical	9	9	20	12	21	10	18	14	14	16	143	14	20
Counseling/guidance	3	3	2	0	1	2	0	4	4	8	27	4	10
Developmental/gerontol .	1	0	1	3	1	4	3	1	8	5	27	6	7
Educational	2	2	4	2	0	1	2	3	5	4	25	6	6
School	0	0	0	0	1	1	0	1	1	0	4	0	0
Exper, compar, physiol(41)	14	5	6	0	0	0	0	0	-	-	25	-	-
Experimental(41)	-	0	4	12	16	8	14	12	12	19	97	18	20
Comparative(41)	-	0	4	1	0	2	0	0	0	2	9	2	2
Physiological(41)	-	0	0	2	5	5	7	7	6	1	33	8	8
Industrial/personnel ...	1	1	1	1	5	2	1	2	5	5	24	5	7
Personality	1	1	3	1	2	0	1	1	1	3	14	3	4
Psychometrics	0	2	2	0	6	3	6	1	2	1	23	3	3
Social	9	8	8	3	6	3	9	7	8	11	72	23	17
Psychology, general	1	0	1	0	1	0	4	4	6	9	26	4	14
Psychology, other	0	1	0	0	0	0	1	0	2	6	10	3	3
Total, non-sci/engineering(43)	221	260	301	312	382	452	497	575	744	761	4505	910	1046
Total, all fields	1176	1306	1515	1605	1931	2313	2544	2924	3314	3569	22200	4148	4597

See footnotes at end of table.

Table 2. New science and engineering doctorates by subfield and citizenship status: 1960-82--con.

Non-U.S. Citizenship, total

Field of study	Year of doctorate 1972	1973	1974	1975	1976	1977	1978	1979	Total 1970-79	1980	1981	1982	Total 1980-82	Total 1960-82
Mathematical sciences	234	254	295	272	238	225	233	244	2404	257	289	304	850	4271
Algebra	22	20	27	26	24	15	15	16	210	13	19	14	46	374
Analysis/funct anyl(26).	34	45	48	47	27	38	26	32	375	23	34	35	92	662
Geometry	9	9	12	7	7	8	4	4	81	8	4	10	22	138
Logic	5	4	1	4	8	4	5	3	43	4	1	3	8	75
Number theory	4	4	4	8	4	4	2	1	42	7	4	4	15	91
Probability/math stat(27)	36	46	43	45	57	46	51	53	415	62	61	61	184	841
Topology	15	13	15	16	17	14	8	11	141	9	11	6	26	239
Topological algebra(28).	-	-	-	-	-	-	-	-	-	-	-	-	-	23
Computing theory	29	44	48	44	24	18	10	4	258	2	5	6	13	329
Computer science(13) ...	-	-	-	-	-	4	31	44	79	56	60	71	187	266
Operations research(29).	-	0	9	18	9	17	12	12	77	16	18	17	51	128
Applied mathematics	31	35	42	18	27	29	29	36	298	27	34	36	97	541
Mathematics, general ...	28	28	37	34	27	21	27	28	283	22	27	30	79	407
Mathematics, other	21	6	9	5	7	7	13	0	102	8	11	11	30	157
Life sciences	844	867	907	844	756	764	744	723	8060	778	772	740	2290	15315
Biological sciences	527	558	571	507	475	480	434	429	5033	447	412	458	1317	9666
Biochemistry	98	116	110	107	107	91	102	90	1058	72	74	83	229	2108
Biophysics	19	25	22	13	22	26	15	20	191	18	19	17	54	320
Biometry, biostatistics.	10	9	15	4	9	13	10	8	94	9	7	8	24	159
Anatomy	11	7	11	12	6	10	11	11	111	13	7	12	32	214
Cytology(30)	2	6	2	9	3	1	3	2	39	6	5	1	12	90
Embryology	2	2	2	2	2	0	0	0	15	2	1	2	5	36
Immunology(31)	3	3	15	9	17	11	12	12	82	15	10	15	40	122
Botany	29	19	30	19	22	13	18	16	212	14	14	19	47	487
Ecology	11	16	14	14	6	13	9	8	110	13	12	13	38	194
Hydrobiology(8)	1	1	1	0	0	0	0	0	8	-	-	-	-	16
Microbiology/bacteriol(32)	52	49	61	55	45	39	44	32	490	41	45	45	131	1037
Animal/plant physiol(33)	-	-	-	-	-	-	-	-	-	-	-	-	-	36
Animal physiology(33) ..	46	40	40	37	25	43	27	23	371	22	23	38	83	651
Plant physiology(33) ...	18	25	21	20	16	15	9	14	177	8	14	12	34	372
Nutrition(34)	-	-	-	-	-	-	-	-	-	-	-	-	-	13
Zoology	25	25	15	19	15	21	9	14	191	13	13	10	36	413
Genetics	40	35	39	30	33	19	20	20	315	28	18	24	70	713
Entomology	43	47	41	37	29	36	31	41	382	38	34	40	112	788
Molecular biology(17) ..	20	16	23	25	17	20	23	18	187	25	14	20	59	261
Nutrition/dietetics(11).	-	-	-	-	26	30	23	23	102	13	19	24	56	158
Parasitology(9)	-	0	6	4	1	4	3	5	23	6	3	4	13	36
Pathology	19	20	17	12	15	16	7	12	147	18	18	15	51	270
Pharmacology	23	38	31	20	21	25	21	19	250	32	27	21	80	495
Neurosciences(35)	-	-	-	-	-	-	-	-	-	-	-	8	8	8
Biological sci, general.	18	27	19	19	21	20	22	22	210	24	21	17	62	295
Biological sci, other ..	37	32	36	40	15	14	15	19	268	17	14	10	41	374
Agricultural sciences	317	309	336	337	281	284	310	294	3027	331	360	282	973	5649
Agronomy	51	62	61	61	68	54	52	59	602	69	64	56	189	1331
Animal husbandry	17	6	5	4	3	7	4	5	101	6	5	2	13	395
Food sci/technology(17).	36	52	44	63	38	53	51	43	433	50	55	52	157	604
Fish/wildlife	1	7	9	11	4	7	5	4	63	14	2	8	24	112
Forestry	18	20	27	24	23	15	24	24	206	18	24	14	56	353
Horticulture	43	17	23	25	21	20	27	18	247	28	37	22	87	539
Soils/soil science(36) .	44	50	50	38	37	38	43	41	396	36	45	32	113	528
Animal sci/nutrition(37)	24	37	53	46	34	32	38	39	303	33	59	32	124	427
Phytopathology	37	32	31	33	31	25	30	25	322	39	30	25	94	734
Agriculture, general ...	2	0	5	7	4	6	3	5	35	1	4	4	9	65
Agriculture, other	44	26	28	25	18	27	30	31	319	37	35	35	107	561
Social sciences	614	698	654	656	653	654	621	626	6294	589	647	664	1900	10780
Anthropology	18	26	28	31	40	38	46	43	316	31	35	36	102	511
Archeology	1	1	3	4	2	1	2	4	22	1	2	2	5	37
Hist/phil of science(38)	3	3	6	2	7	1	4	2	31	0	4	3	7	38
Linguistics	38	51	44	47	41	51	49	48	445	52	50	57	159	777
Sociology	88	90	95	111	103	95	80	90	926	97	96	82	275	1522
Economics	215	260	235	217	239	244	230	247	2293	238	255	256	749	4275
Econometrics	13	11	8	14	11	13	8	7	101	8	10	11	29	204
Agricultural economics .	57	73	70	70	66	60	65	76	636	61	76	82	219	888
Statistics(39)	32	28	16	19	12	17	20	14	236	13	20	26	59	335
Geography	38	43	32	29	28	35	37	20	326	22	22	28	72	546
Pol sci, public admin(40)	111	112	117	112	7	-	-	-	611	-	-	-	-	1072
Political science(40) ..	-	-	0	0	97	99	80	75	351	66	77	81	224	575
Psychology	129	130	131	156	127	120	115	118	1246	121	127	112	360	2165
Clinical	12	25	26	31	14	17	25	15	199	22	21	25	68	410
Counseling/guidance	7	7	8	11	10	7	10	12	86	4	19	11	34	147
Developmental/gerontol .	8	11	10	14	8	11	5	11	91	9	6	11	26	144
Educational	11	9	7	4	7	9	8	12	79	6	8	3	17	121
School	2	2	4	2	6	1	2	3	22	3	1	3	7	33
Exper, compar, physiol(41)	-	-	-	-	-	-	-	-	-	-	-	-	-	25
Experimental(41)	17	22	18	18	16	22	16	15	182	19	13	12	44	323
Comparative(41)	0	1	0	1	3	1	0	0	10	0	0	1	1	20
Physiological(41)	9	7	9	9	6	7	9	4	76	5	5	4	14	123
Industrial/personnel ...	5	5	8	7	10	6	5	5	63	2	4	4	10	97
Personality	4	2	2	1	5	1	2	1	25	1	1	1	3	42
Psychometrics	7	3	3	3	3	3	2	2	32	2	3	0	5	60
Social	24	18	21	28	23	11	12	10	187	8	11	14	33	292
Psychology, general	9	12	10	17	12	15	6	14	113	13	17	9	39	178
Psychology, other	14	6	5	10	4	9	13	14	81	27	18	14	59	150
Total, non-sci/engineering(43)	1132	1182	1161	1262	1270	1235	1289	1373	11860	1356	1453	1536	4345	20710
Total, all fields	4925	5172	5185	5250	5023	4816	4765	4906	48787	4934	5221	5413	15568	86555

See footnotes at end of table.

Table 2. New science and engineering doctorates by subfield and citizenship status: 1960-82--con.

Non-U.S., permanent residents

Field of study	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	Total 1960-69	1970	1971
	Year of doctorate												
Total, science/engineering ...	219	200	196	279	367	436	451	679	765	938	4530	1219	1465
Physical sciences	41	50	42	48	80	85	97	143	126	170	882	263	305
Physics/astronomy	17	14	19	24	27	42	40	73	63	67	386	99	131
Astronomy/astrophysics(1)	1	0	0	0	1	2	4	4	1	0	13	-	-
Astronomy(1)	-	-	-	-	-	-	-	-	-	1	1	2	4
Astrophysics(1)	-	-	-	-	-	-	-	-	-	1	1	3	0
Atomic/molecular	2	1	3	2	2	6	4	6	10	6	42	4	2
Electromagnetism(2)	1	0	0	3	3	0	2	4	1	1	15	2	2
Mechanics(3)	0	0	1	0	0	0	2	1	0	1	5	1	0
Acoustics	0	0	1	0	0	0	0	1	0	1	3	0	3
Fluids	0	2	1	1	0	2	1	6	6	2	21	4	5
Plasma(4)	-	-	-	-	-	-	-	0	0	2	2	10	6
Optics	0	0	0	0	0	1	0	0	0	2	3	1	3
Thermal(5)	0	0	0	0	2	0	0	0	0	0	2	0	2
Elementary particles ...	1	3	2	7	4	10	7	15	8	7	64	12	21
Nuclear physics(6)	0	0	0	0	0	0	0	0	0	0	0	0	0
Nuclear structure	4	2	4	3	2	7	7	9	10	7	37	15	19
Solid state	2	1	6	2	10	12	10	19	16	21	99	18	29
Theoretical physics(7) .	6	4	0	0	0	-	-	-	-	-	10	-	-
Physics, general	0	0	0	1	0	0	1	2	6	10	20	19	15
Physics, other	0	1	1	3	3	2	2	6	5	5	28	6	20
Chemistry	24	36	23	24	53	43	57	70	63	103	496	164	174
Analytical	0	2	1	1	5	1	2	2	1	1	16	9	10
Inorganic	4	5	0	1	4	3	2	5	7	12	43	11	14
Organic	9	12	11	8	21	17	18	23	24	36	179	39	47
Nuclear chemistry	0	0	1	0	3	2	0	2	1	3	12	3	3
Physical	9	12	8	9	13	13	21	19	17	20	141	52	34
Theoretical chemistry ..	0	0	0	1	2	0	0	2	3	2	10	3	12
Agricultural/food(8) ...	0	4	1	0	1	3	7	9	7	8	40	15	14
Pharmaceutical	2	0	0	3	1	3	5	3	2	11	30	11	12
Polymer(9)	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemistry, general	0	0	0	0	1	1	2	0	0	4	8	11	9
Chemistry, other	0	1	1	1	2	0	0	5	1	6	17	10	19
Earth, env & marine sciences	10	3	3	12	11	21	10	14	17	30	131	33	39
Mineral, petrol, geochem(10)	5	0	2	2	3	4	2	5	4	0	27	-	-
Mineralogy, petrology(10)	-	-	-	-	-	-	-	-	-	2	2	5	3
Geochemistry(10)	-	-	-	-	-	-	-	-	1	5	6	1	5
Stratigraphy, sediment .	1	2	0	1	1	4	0	0	0	3	12	3	3
Paleontology	0	0	0	2	0	1	1	0	1	0	5	0	2
Structural geology	1	0	0	1	0	1	1	1	0	0	5	1	0
Geophysics	2	0	0	0	1	2	1	2	2	5	15	9	10
Geophysics, solid earth(11)	-	-	-	-	-	-	-	-	-	-	-	-	-
Geomorph/glacial geol ..	0	0	0	0	0	0	0	0	1	0	1	0	0
Hydrology/water res(12).	0	0	0	1	0	1	0	1	0	2	5	1	2
Oceanography	1	0	0	0	2	2	1	1	1	1	9	1	3
Marine sci, other(13) ..	-	-	-	-	-	-	-	-	-	-	-	-	-
Meteorology(14)	0	0	1	2	1	2	0	0	2	5	13	5	6
Atmospheric phys/chem(11)	-	-	-	-	-	-	-	-	-	-	-	-	-
Atmospheric dynamics(11)	-	-	-	-	-	-	-	-	-	-	-	-	-
Atmospheric sci, other(11)	-	-	-	-	-	-	-	-	-	-	-	-	-
Environ science, general	-	-	-	-	-	-	-	-	-	-	-	-	-
Environ science, other .	-	-	-	-	-	-	-	-	-	-	-	-	-
Applied geology(15)	0	1	0	1	2	3	3	1	1	0	12	0	0
Applied geology(15)	-	-	-	-	-	-	-	-	-	1	1	1	1
Fuel technology(15)	-	-	-	-	-	-	-	-	3	2	5	4	4
Earth science, general .	-	-	0	1	0	1	0	2	0	2	6	2	0
Earth science, other ...	-	-	0	1	1	0	1	1	1	2	7	0	0
Engineering	54	55	60	85	109	138	144	229	273	349	1496	430	530
Aeronaut/astronautical(16)	1	4	1	6	7	7	7	12	14	25	84	23	26
Agricultural	2	0	1	1	2	1	1	0	6	5	19	2	7
Biomedical(17)	-	-	-	-	-	-	-	-	-	2	2	6	4
Chemical	5	8	10	14	20	19	14	23	23	48	186	82	62
Civil	9	4	8	10	15	19	21	31	34	45	196	58	88
Ceramic	1	0	3	3	2	2	2	2	2	2	19	3	3
Computer(18)	-	-	-	-	-	-	-	-	-	-	-	-	-
Electrical	13	12	13	15	22	21	35	46	45	65	287	74	102
Electronics	4	4	4	3	7	8	12	22	20	18	102	19	15
Industrial	0	0	1	2	1	6	1	2	6	9	28	9	12
Nuclear engineering(19).	-	-	-	-	-	-	-	-	-	9	9	14	3
Engineering mechanics ..	3	8	9	9	6	21	18	28	35	35	172	34	49
Engineering physics(19).	2	1	2	1	3	9	6	13	13	6	56	3	6
Mechanical	11	10	8	10	10	11	14	26	32	32	164	38	54
Metallurgy/phys met(20).	2	3	0	6	9	3	7	10	14	21	75	23	30
Systems design(18)	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations research(21).	-	-	-	-	-	-	-	-	-	-	-	-	1
Fuel technology(22)	-	-	-	-	-	-	-	-	-	-	-	-	-
Sanitary/environmental(23)	0	1	0	1	3	3	2	3	7	0	20	3	4
Mining(25)	-	-	-	-	-	-	-	-	-	4	4	2	7
Materials science(17) ..	-	-	-	-	-	-	-	-	-	3	3	2	12
Engineering, general ...	0	0	0	1	0	1	1	2	2	5	12	5	8
Engineering, other	1	0	0	3	2	7	3	7	20	15	58	30	37

See footnotes at end of table.

Table 2. New science and engineering doctorates by subfield and citizenship status: 1960-82--con.

Non-U.S., permanent residents

Field of study	1972	1973	1974	1975	1976	1977	1978	1979	Total 1970-79	1980	1981	1982	Total 1980-82	Total 1960-82
						Year of doctorate								
Total, science/engineering ...	1624	1563	1382	1246	1078	979	970	927	12453	935	876	831	2642	19625
Physical sciences	322	303	257	236	217	191	183	165	2442	151	147	118	416	3740
Physics/astronomy	125	126	98	109	76	86	64	70	984	51	53	35	139	1509
Astronomy/astrophysics(1)	-	-	-	-	-	-	-	-	-	-	-	-	-	13
Astronomy(1)	5	2	0	2	1	2	1	4	23	3	1	0	4	28
Astrophysics(1)	2	0	1	3	2	1	3	0	15	2	3	1	6	22
Atomic/molecular	9	8	7	11	5	3	8	2	61	3	2	7	12	115
Electromagnetism(2)	0	1	1	2	3	2	0	0	13	-	-	-	-	28
Mechanics(3)	0	1	0	0	0	-	-	-	2	-	-	-	-	7
Acoustics	2	1	1	0	0	0	0	0	7	2	2	1	5	15
Fluids	4	4	4	0	3	1	1	2	28	0	1	2	3	52
Plasma(4)	9	6	4	6	6	8	4	4	63	4	1	1	6	71
Optics	0	3	1	4	2	1	2	2	19	5	4	0	9	31
Thermal(5)	1	4	3	0	0	2	1	0	13	0	1	0	1	16
Elementary particles ...	14	21	10	8	6	8	2	7	109	7	6	2	15	188
Nuclear physics(6)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nuclear structure	14	16	10	10	4	9	4	4	105	4	1	2	7	169
Solid state	44	33	33	42	25	22	19	25	290	11	13	11	35	424
Theoretical physics(7) .	-	-	-	-	-	-	-	-	-	-	-	-	-	10
Physics, general	12	17	13	14	15	17	12	14	148	7	15	5	27	195
Physics, other	9	9	10	7	4	10	7	6	88	3	3	3	9	125
Chemistry	197	177	159	127	141	105	119	95	1458	100	94	83	277	2231
Analytical	8	8	9	4	3	9	8	12	80	11	8	8	27	123
Inorganic	20	11	9	6	17	3	8	8	107	7	6	8	21	171
Organic	56	49	43	41	43	33	28	26	405	37	33	19	89	673
Nuclear chemistry	3	3	3	0	3	1	2	1	22	0	0	2	2	36
Physical	49	49	46	34	26	27	22	21	360	15	13	19	47	548
Theoretical chemistry ..	2	6	4	5	1	2	0	1	36	0	1	0	1	47
Agricultural/food(8) ...	7	4	1	2	2	0	1	0	46	-	-	-	-	86
Pharmaceutical	14	9	12	12	14	9	17	8	118	6	5	6	17	165
Polymer(9)	-	4	8	5	7	5	11	4	44	13	13	6	32	76
Chemistry, general	22	19	17	14	17	8	15	10	142	8	8	11	27	177
Chemistry, other	16	15	7	4	8	8	7	4	98	3	7	4	14	129
Earth, env & marine sciences	58	49	47	38	32	22	22	34	374	26	16	28	70	575
Mineral, petrol, geochem(10)	-	-	-	-	-	-	-	-	-	-	-	-	-	27
Mineralogy, petrology(10)	8	3	3	1	1	1	0	1	26	1	0	1	2	30
Geochemistry(10)	3	3	1	3	3	6	1	1	27	0	2	2	4	37
Stratigraphy, sediment .	5	3	2	0	1	0	2	4	23	0	0	1	1	36
Paleontology	3	1	2	1	1	0	0	0	10	0	0	0	0	15
Structural geology	1	0	0	0	0	0	0	1	3	0	0	1	1	9
Geophysics	10	5	10	10	4	-	-	-	58	-	-	-	-	73
Geophysics, solid earth(11)	-	-	-	-	2	1	0	5	8	6	5	6	17	25
Geomorph/glacial geol ..	0	0	1	4	0	0	1	0	6	0	0	1	1	8
Hydrology/water res(12).	1	6	1	1	0	0	3	1	16	1	0	4	5	26
Oceanography	3	5	7	5	5	5	0	2	36	3	1	1	5	50
Marine sci, other(13) ..	-	-	-	-	-	0	0	0	0	1	0	2	3	3
Meteorology(14)	11	7	8	3	4	-	-	-	44	-	-	-	-	57
Atmospheric phys/chem(11)	-	-	-	-	1	0	3	1	5	2	0	0	2	7
Atmospheric dynamics(11)	-	-	-	-	0	1	1	5	7	2	1	2	5	12
Atmospheric sci, other(11)	-	-	-	-	3	3	5	2	13	3	1	3	7	20
Environ science, general	0	2	1	2	2	1	1	3	12	1	1	0	2	14
Environ science, other .	3	1	0	2	0	1	2	2	11	2	1	0	3	14
Applied geology(15)	-	-	-	-	-	-	-	-	-	-	-	-	-	12
Applied geology(15)	3	2	3	1	1	0	1	1	14	0	1	1	2	17
Fuel technology(15)	2	4	2	2	1	0	0	1	20	-	-	-	-	25
Earth science, general .	1	4	4	2	3	1	2	2	21	2	2	3	7	36
Earth science, other ...	4	3	2	1	0	2	0	2	14	2	1	0	3	26
Engineering	622	557	515	418	390	326	325	322	4435	299	301	296	896	6827
Aeronaut/astronautical(16)	32	25	17	16	8	10	14	15	186	11	6	10	27	297
Agricultural	5	4	6	4	3	1	3	4	39	1	4	3	8	66
Biomedical(17)	6	8	11	5	6	4	7	5	62	7	9	3	19	83
Chemical	71	78	76	65	49	45	46	46	620	40	43	37	120	926
Civil	85	71	57	42	50	44	27	21	543	24	34	27	85	824
Ceramic	3	2	1	3	6	7	3	2	33	3	5	3	11	63
Computer(18)	-	-	-	9	13	18	13	12	65	9	17	11	37	102
Electrical	113	91	88	60	74	64	52	66	784	43	51	56	150	1221
Electronics	26	16	17	12	8	11	7	12	143	9	7	6	22	267
Industrial	20	8	10	10	4	9	5	9	96	10	7	11	28	152
Nuclear engineering(19).	14	17	9	10	15	10	17	9	118	14	14	8	36	163
Engineering mechanics ..	66	45	42	33	18	15	10	11	323	10	7	17	34	529
Engineering physics(19).	9	5	6	1	2	0	1	3	36	2	3	0	5	97
Mechanical	72	67	66	52	44	26	44	39	502	49	37	48	134	800
Metallurgy/phys met(20).	28	18	18	25	15	12	18	10	197	14	13	7	34	306
Systems design(18)	-	0	0	7	10	6	7	11	41	4	7	4	15	56
Operations research(21).	9	21	18	14	13	8	9	7	100	7	9	6	22	122
Fuel technology(22)	-	2	3	5	2	4	5	2	23	7	3	7	17	40
Sanitary/environmental(23)	10	14	16	8	10	4	6	4	79	5	1	8	14	113
Mining(25)	3	4	1	2	1	0	3	0	23	0	2	1	3	30
Materials science(17) ..	24	21	23	20	23	20	17	22	184	19	18	13	50	237
Engineering, general ...	0	8	7	2	7	1	2	5	45	2	3	1	6	63
Engineering, other	26	32	23	13	9	7	9	7	193	9	1	9	19	270

See footnotes at end of table.

Table 2. New science and engineering doctorates by subfield and citizenship status: 1960-82--con.

Non-U.S., permanent residents

Field of study	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	Total 1960-69	1970	1971
	Year of doctorate												
Mathematical sciences	11	8	10	14	12	19	25	37	44	52	232	58	65
Algebra	1	0	0	0	1	1	3	2	5	4	17	5	10
Analysis/funct anyl(26).	2	2	1	2	2	2	3	8	8	14	44	10	13
Geometry	0	0	0	0	1	2	0	1	1	0	5	2	6
Logic	0	0	0	0	0	0	0	1	0	0	1	1	0
Number theory	0	0	1	0	0	0	0	1	0	4	6	0	2
Probability/math stat(27)	3	3	3	5	5	7	9	5	11	3	54	9	6
Topology	1	1	1	0	0	1	1	9	1	1	16	5	3
Topological algebra(28).	0	0	0	0	1	0	1	0	-	-	2	-	-
Computing theory	1	0	0	1	0	1	1	2	2	8	16	8	5
Computer science(13) ...	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations research(29).	-	-	-	-	-	-	-	-	-	-	-	-	-
Applied mathematics	3	2	3	4	1	5	6	7	11	7	49	6	9
Mathematics, general ...	0	0	1	1	1	0	0	0	3	6	12	4	9
Mathematics, other	0	0	0	1	0	0	1	1	2	5	10	8	2
Life sciences	56	45	43	58	77	86	82	122	174	176	919	218	284
Biological sciences	40	39	25	46	60	66	67	100	133	141	717	171	208
Biochemistry	16	12	10	10	21	17	15	23	44	40	208	39	63
Biophysics	1	1	0	0	2	1	6	3	5	6	25	9	6
Biometry, biostatistics.	0	0	0	1	0	1	2	3	1	1	9	5	2
Anatomy	1	0	2	1	0	4	3	1	1	7	20	5	8
Cytology(30)	-	-	1	2	2	2	4	0	2	2	15	3	1
Embryology	0	0	0	1	1	1	0	1	0	0	4	0	1
Immunology(31)	-	-	-	-	-	-	-	-	-	-	-	-	-
Botany	3	2	1	2	4	1	5	3	5	5	31	5	6
Ecology	0	2	0	2	0	1	1	2	2	0	10	2	0
Hydrobiology(8)	0	0	0	0	0	1	0	1	0	0	2	3	0
Microbiology/bacteriol(32)	6	6	3	5	8	10	4	20	15	19	96	24	22
Animal/plant physiol ...	2	4	1	-	-	-	-	-	-	-	7	-	-
Animal physiology(33) ..	0	0	0	4	8	6	7	13	7	10	55	15	18
Plant physiology(33) ...	0	0	1	5	0	2	5	1	3	6	23	3	4
Nutrition(34)	4	0	0	0	-	-	-	-	-	-	4	-	-
Zoology	2	2	0	2	3	5	5	4	8	6	37	5	9
Genetics	2	5	2	3	3	4	3	6	8	6	42	7	7
Entomology	1	2	1	4	0	2	2	6	11	6	35	7	10
Molecular biology(17) ..	-	-	-	-	-	-	-	-	-	5	5	7	6
Nutrition/dietetics(11).	-	-	-	-	-	-	-	-	-	-	-	-	-
Parasitology(9)	-	-	-	-	-	-	-	-	-	-	-	-	-
Pathology	0	0	0	1	2	2	0	6	2	4	17	6	7
Pharmacology	2	2	2	2	5	5	5	7	14	9	53	10	17
Neurosciences(35)	0	0	0	0	0	0	0	0	0	0	0	0	0
Biological sci, general.	0	0	0	0	0	0	0	0	1	2	3	6	10
Biological sci, other ..	0	1	1	1	1	1	0	0	4	7	16	12	11
Agricultural sciences	16	6	18	12	17	20	15	22	41	35	202	47	76
Agronomy	9	2	4	3	4	5	3	6	8	11	55	12	14
Animal husbandry	2	2	5	3	4	2	3	5	8	3	37	6	4
Food sci/technology(17).	-	-	-	-	-	-	-	-	-	2	2	7	15
Fish/wildlife	0	0	0	0	0	0	0	1	0	2	3	1	3
Forestry	0	1	1	3	3	1	0	1	7	2	19	5	3
Horticulture	1	0	3	3	4	5	5	2	2	2	27	4	9
Soils/soil science(36) .	-	-	-	-	-	-	-	-	0	3	3	2	6
Animal sci/nutrition(37)	-	-	-	-	-	-	-	-	-	0	0	0	0
Phytopathology	2	1	4	0	2	4	3	4	6	5	31	4	11
Agriculture, general ...	1	0	0	0	0	1	0	0	1	2	5	0	0
Agriculture, other	1	0	1	0	0	2	1	3	9	3	20	6	11
Social sciences	33	29	25	48	50	73	68	113	99	132	670	176	192
Anthropology	1	2	2	1	0	2	7	6	4	7	32	8	12
Archeology	0	0	0	0	1	1	0	0	0	0	2	0	1
Hist/phil of science(38)	-	-	-	-	-	-	-	-	-	-	-	-	0
Linguistics	1	2	3	3	6	7	6	8	6	10	52	12	12
Sociology	3	7	2	6	9	13	9	13	12	20	94	38	29
Economics	20	13	12	20	22	27	31	56	40	46	287	62	57
Econometrics	2	1	1	0	0	4	2	3	5	2	20	3	3
Agricultural economics(17)	-	-	-	-	-	-	-	-	-	7	7	4	12
Statistics(39)	-	-	-	-	-	-	-	0	1	7	8	12	14
Geography	4	1	1	6	4	4	1	5	9	10	45	9	14
Pol sci, public admin(40)	2	3	4	12	8	15	12	22	22	23	123	28	38
Political science(40) ..	-	-	-	-	-	-	-	-	-	-	-	-	-
Psychology	14	10	13	14	28	14	25	21	32	29	200	41	50
Clinical	4	5	9	6	13	6	9	6	8	6	72	9	11
Counseling/guidance	2	0	0	0	0	0	0	2	2	0	6	2	5
Developmental/gerontol .	0	0	0	0	0	2	0	0	4	2	8	2	3
Educational	0	1	0	1	0	1	2	2	0	1	8	4	5
School	0	0	0	0	0	0	0	0	0	0	0	0	0
Exper, compar, physiol(40)	5	1	1	0	0	0	0	0	-	-	7	-	-
Experimental(41)	-	0	0	4	5	2	5	5	7	6	34	7	4
Comparative(41)	-	0	0	0	0	0	0	0	0	2	2	1	2
Physiological(41)	-	0	0	1	2	1	3	3	3	1	14	3	1
Industrial/personnel ...	0	0	0	0	2	0	1	1	2	0	6	2	1
Personality	0	1	1	0	0	0	0	0	0	0	2	0	3
Psychometrics	0	1	0	0	3	1	2	1	0	1	9	1	2
Social	3	1	2	2	2	1	2	1	3	3	20	6	6
Psychology, general	0	0	0	0	1	0	1	0	2	5	9	2	5
Psychology, other	0	0	0	0	0	0	0	0	1	2	3	2	2
Total, non-sci/engineering(43)	60	56	78	75	101	124	185	197	281	297	1454	357	442
Total, all fields	279	256	274	354	468	560	636	876	1046	1235	5984	1576	1907

See footnotes at end of table.

Table 2. New science and engineering doctorates by subfield and citizenship status: 1960-82--con.

Non-U.S., permanent residents

Field of study	1972	1973	1974	1975	1976	1977	1978	1979	Total 1970-79	1980	1981	1982	Total 1980-82	Total 1960-82
	Year of doctorate													
Mathematical sciences	65	81	71	75	55	55	52	63	640	75	63	53	191	1063
Algebra	5	9	9	6	5	3	2	6	60	3	5	2	10	87
Analysis/funct anyl(26).	8	13	14	11	2	5	7	10	93	6	4	4	14	151
Geometry	2	3	4	3	0	1	0	0	21	4	2	2	8	34
Logic	0	1	0	0	1	0	0	0	3	3	0	2	5	9
Number theory	1	0	0	2	1	0	1	0	7	1	1	1	3	16
Probability/math stat(27)	13	17	10	14	12	15	13	16	125	23	11	8	42	221
Topology	6	3	4	4	5	1	2	3	36	3	1	1	5	57
Topological algebra(28).	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Computing theory	8	19	11	17	8	6	3	1	86	1	2	2	5	107
Computer science(13) ...	-	-	-	-	-	1	5	12	18	13	20	12	45	63
Operations research(29).	0	0	0	3	5	7	4	2	21	4	4	2	10	31
Applied mathematics	11	11	11	7	4	12	5	7	83	9	7	12	28	160
Mathematics, general ...	7	4	5	7	6	3	6	6	57	4	4	3	11	80
Mathematics, other	4	1	3	1	6	1	4	0	30	1	2	2	5	45
Life sciences	307	319	273	260	199	189	185	161	2395	186	159	139	484	3798
Biological sciences	222	244	208	190	162	162	142	132	1841	151	124	116	391	2949
Biochemistry	52	65	44	50	42	37	36	39	467	19	31	34	84	759
Biophysics	5	8	6	4	12	8	10	7	75	10	6	2	18	118
Biometry, biostatistics.	4	4	3	0	2	3	3	5	31	3	0	1	4	44
Anatomy	7	4	7	5	5	4	2	6	53	4	3	2	9	82
Cytology(30)	2	3	2	3	3	0	0	2	19	4	1	0	5	39
Embryology	0	1	0	0	0	0	0	0	2	2	0	1	3	9
Immunology(31)	1	1	9	4	5	5	6	9	40	9	4	5	18	58
Botany	10	4	8	2	5	1	3	1	45	3	2	2	7	83
Ecology	2	3	2	3	4	2	1	3	22	4	2	2	8	40
Hydrobiology(8)	0	0	1	0	0	0	0	0	4	-	-	-	-	6
Microbiology/bacteriol(32)	21	29	26	28	19	17	13	13	212	20	13	12	45	353
Animal/plant physiol ...	-	-	-	-	-	-	-	-	-	-	-	-	-	7
Animal physiology(33) ..	22	18	17	18	8	12	8	9	145	6	9	7	22	222
Plant physiology(33) ...	4	7	2	6	5	2	3	1	37	4	3	4	11	71
Nutrition(34)	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Zoology	10	12	2	3	1	8	3	5	58	3	2	3	8	103
Genetics	16	10	10	5	3	8	5	3	74	6	3	6	15	131
Entomology	12	12	9	3	3	3	9	5	73	7	7	3	17	125
Molecular biology(17) ..	10	6	12	9	8	7	9	3	77	7	7	2	16	98
Nutrition/dietetics(11).	-	-	-	-	10	8	6	9	33	4	5	6	15	48
Parasitology(9)	-	0	3	1	1	2	0	0	7	1	0	0	1	8
Pathology	11	13	8	7	7	8	3	2	70	8	2	3	13	100
Pharmacology	10	19	15	12	10	14	9	1	117	17	11	7	35	205
Neurosciences(35)	-	-	-	-	-	-	-	-	-	-	-	7	7	7
Biological sci, general.	7	14	6	8	4	9	7	5	76	6	8	6	20	99
Biological sci, other ..	16	11	16	19	5	4	6	4	104	4	5	1	10	130
Agricultural sciences	85	75	65	70	37	27	43	29	554	35	35	23	93	849
Agronomy	10	10	3	7	2	4	5	2	69	5	4	3	12	136
Animal husbandry	4	1	2	0	0	0	0	1	18	1	1	0	2	57
Food sci/technology(17).	16	24	16	26	13	7	17	8	149	12	6	7	25	176
Fish/wildlife	0	3	2	6	0	2	0	0	17	1	0	0	1	21
Forestry	7	4	4	3	1	4	2	2	35	0	3	1	4	58
Horticulture	14	2	6	3	1	0	4	2	45	1	5	2	8	80
Soils/soil science(36) .	5	9	5	8	5	1	3	3	47	4	5	2	11	61
Animal sci/nutrition(37)	6	6	14	11	8	5	4	5	59	3	5	4	12	71
Phytopathology	9	9	6	4	5	0	1	4	53	2	3	2	7	91
Agriculture, general ...	0	0	1	0	1	0	0	0	2	0	0	1	1	8
Agriculture, other	14	7	6	2	1	4	7	2	60	6	3	1	10	90
Social sciences	199	204	172	164	144	149	149	137	1686	148	143	150	441	2797
Anthropology	10	10	11	8	12	13	14	16	114	14	10	6	30	176
Archeology	1	0	1	1	0	0	1	0	5	1	2	0	3	10
Hist/phil of science(38)	0	2	3	1	3	0	2	0	11	0	0	0	0	11
Linguistics	14	16	13	14	8	12	9	12	122	13	3	12	28	202
Sociology	34	30	30	27	35	29	25	29	306	34	27	28	89	489
Economics	57	77	53	46	45	43	52	50	542	51	55	61	167	996
Econometrics	7	1	2	5	3	2	1	2	29	3	5	2	10	59
Agricultural economics(17)	8	16	8	12	7	6	3	7	53	7	12	9	28	118
Statistics(39)	15	11	3	3	0	0	5	3	66	4	2	6	12	86
Geography	11	9	6	10	8	12	9	4	92	2	2	5	9	146
Pol sci, public admin(40)	42	32	42	37	1	-	-	-	220	-	-	-	-	343
Political science(40) ..	-	-	0	0	22	32	28	14	96	19	25	21	65	161
Psychology	51	50	47	55	41	47	54	45	481	50	47	47	144	825
Clinical	4	10	10	16	6	10	13	8	97	10	8	14	32	201
Counseling/guidance	3	3	2	2	3	1	3	5	29	2	9	2	13	48
Developmental/gerontol .	6	4	5	4	2	6	2	4	38	4	3	5	12	58
Educational	5	5	5	0	4	2	5	4	39	5	4	2	11	58
School	2	2	3	1	4	1	2	1	16	2	0	2	4	20
Exper, compar, physiol(40)	-	-	-	-	-	-	-	-	-	-	-	-	-	7
Experimental(41)	6	9	6	6	3	6	7	5	59	9	4	3	16	109
Comparative(41)	0	0	0	0	1	1	0	0	5	0	0	0	0	7
Physiological(41)	4	2	2	1	3	1	3	1	21	3	2	1	6	41
Industrial/personnel ...	2	0	2	3	2	3	3	3	21	0	2	1	3	30
Personality	3	1	0	1	0	0	1	0	9	0	0	1	1	12
Psychometrics	2	3	0	1	1	1	1	0	12	1	0	0	1	22
Social	4	4	5	9	5	4	4	3	50	2	4	4	10	80
Psychology, general	5	5	5	7	6	7	3	6	51	6	7	6	19	79
Psychology, other	5	2	2	4	1	4	7	5	34	6	4	6	16	53
Total, non-sci/engineering(43)	470	435	444	468	416	389	374	393	4188	356	405	393	1154	6796
Total, all fields	2094	1998	1826	1714	1494	1368	1344	1320	16641	1291	1281	1224	3796	26421

See footnotes at end of table.

Table 2. New science and engineering doctorates by subfield and citizenship status: 1960-82--con.

Non-U.S., temporary residents

Field of study	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	Total 1960-69	1970	1971
	Year of doctorate												
Total, science/engineering ...	736	846	1021	1014	1182	1425	1596	1670	1805	1870	13165	2019	2086
Physical sciences	143	187	207	227	231	280	306	357	332	335	2605	363	363
Physics/astronomy	48	68	97	96	91	128	129	152	154	157	1120	187	190
Astronomy/astrophysics(1)	2	1	2	3	6	7	10	4	14	0	49	-	-
Astronomy(1)	-	-	-	-	-	-	-	-	-	3	3	2	3
Astrophysics(1)	-	-	-	-	-	-	-	-	-	6	6	10	4
Atomic/molecular	2	4	7	4	10	4	12	9	9	11	72	13	15
Electromagnetism(2)	1	1	1	2	3	3	3	5	3	1	23	1	2
Mechanics(3)	0	1	0	1	1	1	0	1	1	1	7	1	0
Acoustics	0	1	1	2	0	1	2	0	1	0	8	0	2
Fluids	0	1	3	2	2	3	5	12	7	2	37	2	1
Plasma(4)	-	-	-	-	-	-	-	0	0	8	8	9	12
Optics	1	1	1	3	0	2	1	1	2	0	12	2	1
Thermal(5)	1	0	0	1	1	0	4	2	0	3	12	2	1
Elementary particles ...	1	9	22	28	16	23	27	35	36	31	228	47	40
Nuclear physics(6)	1	1	-	-	-	-	-	-	-	-	2	-	-
Nuclear structure	14	16	29	26	20	26	19	28	16	17	211	21	20
Solid state	11	12	15	15	17	43	33	43	40	31	260	35	45
Theoretical physics(7) .	11	17	12	-	-	-	-	-	-	-	40	-	-
Physics, general	1	0	0	2	5	4	1	3	7	36	59	24	22
Physics, other	2	3	4	7	10	11	12	9	18	7	83	18	22
Chemistry	95	119	110	131	140	152	177	205	178	178	1485	176	173
Analytical	7	6	9	6	5	7	6	11	10	6	73	10	5
Inorganic	7	8	7	5	6	13	15	10	14	19	104	13	9
Organic	28	43	42	39	46	54	68	66	49	48	483	53	62
Nuclear chemistry	2	2	3	4	5	2	3	4	6	5	36	3	4
Physical	24	32	32	43	35	44	41	59	59	44	413	45	46
Theoretical chemistry ..	0	4	1	2	8	4	5	6	5	8	43	6	5
Agricultural/food(8) ...	15	13	9	14	17	11	16	21	8	10	134	13	9
Pharmaceutical	8	7	6	12	11	14	16	18	10	11	113	12	8
Polymer(9)	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemistry, general	4	1	0	5	3	1	1	4	11	18	48	14	16
Chemistry, other	0	3	1	1	4	2	6	6	6	9	38	7	11
Earth, env & marine sciences	35	34	23	51	38	46	52	59	66	78	482	71	45
Mineral, petrol, geochem(10)	9	12	8	17	6	17	10	20	15	0	114	-	-
Mineralogy, petrology(10)	-	-	-	-	-	-	-	-	-	8	8	7	5
Geochemistry(10)	-	-	-	-	-	-	-	-	0	8	8	8	6
Stratigraphy, sediment .	7	7	5	3	6	4	5	10	7	5	59	8	3
Paleontology	1	2	3	3	2	5	8	1	4	1	30	1	1
Structural geology	0	0	0	0	2	2	3	2	1	2	12	0	1
Geophysics	7	8	2	3	4	3	8	9	7	11	62	15	5
Geophysics, solid earth(11)	-	-	-	-	-	-	-	-	-	-	-	-	-
Geomorph/glacial geol ..	2	0	1	1	2	0	0	2	1	2	11	2	1
Hydrology/water res(12).	0	1	0	1	1	0	3	4	1	4	15	4	5
Oceanography	0	1	0	3	1	2	3	2	6	5	23	3	3
Marine sci, other(13) ..	-	-	-	-	-	-	-	-	-	-	-	-	-
Meteorology(14)	6	1	1	7	6	3	3	4	9	8	48	7	2
Atmospheric phys/chem(11)	-	-	-	-	-	-	-	-	-	-	-	-	-
Atmospheric dynamics(11)	-	-	-	-	-	-	-	-	-	-	-	-	-
Atmospheric sci, other(11)	-	-	-	-	-	-	-	-	-	-	-	-	-
Environ science, general	-	-	-	-	-	-	-	-	-	-	-	-	-
Environ science, other .	-	-	-	-	-	-	-	-	-	-	-	-	-
Applied geology(15)	3	2	3	8	5	8	7	3	10	0	49	-	-
Applied geology(15)	-	-	-	-	-	-	-	-	0	9	9	3	0
Fuel technology(15)	-	-	-	-	-	-	-	-	3	5	8	3	4
Earth science, general .	-	-	0	4	2	0	0	1	2	5	14	5	4
Earth science, other ...	-	-	0	1	1	2	2	1	0	5	12	5	5
Engineering	129	154	218	215	247	319	385	409	436	460	2972	471	518
Aeronaut/astronautical(16)	4	9	9	10	11	13	22	16	23	22	139	23	27
Agricultural	3	3	4	3	6	5	3	9	8	7	51	14	12
Biomedical(17)	-	-	-	-	-	-	-	-	-	1	1	1	7
Chemical	35	23	43	30	28	50	46	43	60	58	416	52	59
Civil	14	31	45	43	50	67	80	74	78	89	571	86	104
Ceramic	0	1	2	0	2	1	2	3	1	3	15	2	2
Computer(18)	-	-	-	-	-	-	-	-	-	-	-	-	-
Electrical	23	33	37	45	46	56	81	79	80	79	559	81	84
Electronics	6	8	8	9	11	11	18	10	13	13	107	12	13
Industrial	1	3	4	2	0	2	4	15	13	8	52	29	13
Nuclear engineering(19).	-	-	-	-	-	-	-	-	-	20	20	13	14
Engineering mechanics ..	14	10	21	18	21	35	34	36	32	33	254	31	32
Engineering physics(19).	6	2	5	10	13	11	18	21	18	8	112	3	4
Mechanical	16	9	17	24	22	36	28	48	50	46	296	45	48
Metallurgy/phys met(20).	2	15	14	12	21	20	28	35	20	41	208	28	40
Systems design(18)	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations research(21).	-	-	-	-	-	-	-	-	-	-	-	-	0
Fuel technology(22)	-	-	-	-	-	-	-	-	-	-	-	-	-
Sanitary/environmental(23)	3	5	3	4	5	6	11	2	13	11	63	8	5
Textile(24)	0	0	0	0	0	0	0	0	1	-	1	-	-
Mining(25)	-	-	-	-	-	-	-	-	-	1	1	4	3
Materials science(17) ..	-	-	-	-	-	-	-	-	-	0	0	4	9
Engineering, general ...	0	0	0	0	0	0	0	4	4	8	16	5	2
Engineering, other	2	2	6	5	11	6	10	14	22	12	90	25	40

See footnotes at end of table.

Table 2. New science and engineering doctorates by subfield and citizenship status: 1960-82--con.

Non-U.S., temporary residents

Field of study	1972	1973	1974	1975	1976	1977	1978	1979	Total 1970-79	1980	1981	1982	Total 1980-82	Total 1960-82
	Year of doctorate													
Total, science/engineering ...	2169	2427	2642	2762	2675	2602	2506	2606	24474	2643	2892	3046	8581	46220
Physical sciences	387	437	413	458	431	406	397	415	4070	426	442	506	1374	8049
Physics/astronomy	209	248	230	244	228	207	181	207	2131	189	203	242	634	3885
Astronomy/astrophysics(1)	-	-	-	-	-	-	-	-	-	-	-	-	-	49
Astronomy(1)	3	10	6	7	8	2	1	6	48	3	5	4	12	63
Astrophysics(1)	6	9	6	13	9	8	10	7	82	8	3	6	17	105
Atomic/molecular	11	15	16	27	17	15	12	6	147	9	11	23	43	262
Electromagnetism(2)	1	2	1	0	1	0	1	2	11	-	-	-	-	34
Mechanics(3)	2	1	2	1	1	-	-	-	8	-	-	-	-	15
Acoustics	1	1	0	1	0	3	1	2	11	2	1	3	6	25
Fluids	0	4	2	6	1	2	3	0	21	4	5	4	13	71
Plasma(4)	15	10	7	9	9	10	9	14	104	8	10	15	33	145
Optics	3	4	5	7	6	4	7	10	49	10	11	9	30	91
Thermal(5)	5	2	3	1	1	2	3	1	21	0	3	0	3	36
Elementary particles ...	39	42	32	21	30	28	27	22	328	26	21	35	82	638
Nuclear physics(6)	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Nuclear structure	25	31	27	27	23	15	16	21	226	16	16	14	46	483
Solid state	43	55	72	54	53	57	47	48	509	45	58	51	154	923
Theoretical physics(7) .	-	-	-	-	-	-	-	-	-	-	-	-	-	40
Physics, general	38	47	41	45	51	40	36	46	390	45	49	58	152	601
Physics, other	17	15	10	25	18	21	8	22	176	13	10	20	43	302
Chemistry	178	189	183	214	203	199	216	208	1939	237	239	264	740	4164
Analytical	6	5	11	15	16	8	12	18	106	18	20	19	57	236
Inorganic	20	12	15	17	13	25	21	13	158	22	18	28	68	330
Organic	41	63	38	79	57	49	58	65	565	81	64	86	231	1279
Nuclear chemistry	2	0	4	1	3	3	0	2	22	2	1	5	8	66
Physical	43	54	45	45	46	40	49	35	448	38	35	34	107	968
Theoretical chemistry ..	6	6	6	6	5	8	8	8	64	7	6	8	21	128
Agricultural/food(8) ...	5	2	2	2	2	1	3	2	41	-	-	-	-	175
Pharmaceutical	7	5	2	6	7	8	3	5	63	14	7	11	32	208
Polymer(9)	-	2	11	7	9	13	12	22	76	17	22	17	56	132
Chemistry, general	26	31	39	31	35	36	43	27	296	31	55	39	125	469
Chemistry, other	22	9	10	5	10	8	7	11	100	7	11	17	35	173
Earth, env & marine sciences	64	73	101	95	96	100	68	71	784	80	85	81	246	1512
Mineral, petrol, geochem(10)	-	-	-	-	-	-	-	-	-	-	-	-	-	114
Mineralogy, petrology(10)	7	8	8	10	2	4	0	1	52	1	3	3	7	67
Geochemistry(10)	6	6	7	8	7	3	4	7	62	6	1	7	14	84
Stratigraphy, sediment .	0	6	4	2	9	10	3	3	48	2	5	2	9	116
Paleontology	5	1	1	2	3	0	1	1	16	1	0	0	1	47
Structural geology	4	3	3	1	1	3	2	5	23	0	0	1	1	36
Geophysics	12	11	13	21	10	-	-	-	87	-	-	-	-	149
Geophysics, solid earth(11)	-	-	-	-	9	16	12	10	47	16	12	13	41	88
Geomorph/glacial geol ..	1	1	3	1	1	1	1	0	12	3	1	2	6	29
Hydrology/water res(12).	3	4	6	0	4	8	9	3	46	5	8	6	19	80
Oceanography	3	7	6	7	9	12	14	11	75	6	6	7	19	117
Marine sci, other(13) ..	-	-	-	-	-	0	0	2	2	0	3	6	9	11
Meteorology(14)	3	6	7	11	5	0	0	0	41	0	0	0	0	89
Atmospheric phys/chem(11)	-	-	-	-	2	1	2	1	6	1	1	0	2	8
Atmospheric dynamics(11)	-	-	-	-	3	6	2	5	16	6	4	5	15	31
Atmospheric sci, other(11)	-	-	-	-	6	8	1	11	26	14	12	3	29	55
Environ science, general	0	2	6	6	3	2	0	0	19	2	3	4	9	28
Environ science, other .	4	0	0	2	1	2	1	2	12	1	6	2	9	21
Applied geology(15)	-	-	-	-	-	-	-	-	-	-	-	-	-	69
Applied geology(15)	7	3	11	7	6	3	1	1	42	5	4	8	17	65
Fuel technology(15)	0	3	10	6	2	2	2	2	34	-	-	-	-	42
Earth science, general .	3	7	8	5	9	9	7	2	59	7	12	6	25	95
Earth science, other ...	6	5	8	6	4	10	6	4	59	4	4	6	14	85
Engineering	519	622	704	815	813	773	768	815	6818	851	942	1028	2821	12611
Aeronaut/astronautical(16)	22	27	28	28	28	45	39	35	302	34	35	38	107	548
Agricultural	16	20	21	18	12	15	19	39	186	39	42	23	104	341
Biomedical(17)	7	5	6	7	6	8	10	7	64	5	6	7	18	83
Chemical	56	83	106	111	101	97	83	98	846	113	112	114	339	1601
Civil	85	106	100	107	125	109	110	107	1039	112	135	158	405	2015
Ceramic	7	3	3	4	6	4	2	4	37	7	8	5	20	72
Computer(18)	-	-	-	33	38	30	23	29	153	25	24	39	88	241
Electrical	96	119	115	157	130	117	125	116	1140	117	134	183	434	2133
Electronics	6	21	10	18	24	24	16	31	175	22	15	23	60	342
Industrial	18	12	25	18	26	22	11	23	197	28	20	28	76	325
Nuclear engineering(19).	17	18	24	18	38	23	27	24	221	36	49	49	134	375
Engineering mechanics ..	23	29	27	43	36	28	36	32	317	35	30	37	102	673
Engineering physics(19).	5	4	4	6	0	2	2	4	34	2	7	1	10	156
Mechanical	54	59	79	79	76	80	85	87	692	95	114	122	331	1319
Metallurgy/phys met(20).	38	32	38	31	42	28	29	34	340	33	48	39	120	668
Systems design(18)	-	-	-	21	15	22	24	16	98	22	27	23	72	170
Operations research(21).	11	14	20	29	16	21	26	21	158	13	31	24	68	226
Fuel technology(22)	0	3	5	5	9	9	13	16	60	16	13	8	37	97
Sanitary/environmental(23)	8	13	10	14	18	14	13	8	111	9	17	15	41	215
Textile(24)	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Mining(25)	1	4	0	1	4	1	1	2	21	3	1	0	4	26
Materials science(17) ..	12	25	32	28	31	36	36	43	256	52	35	54	141	397
Engineering, general ...	4	6	11	11	11	10	11	8	79	9	8	4	21	116
Engineering, other	33	19	40	28	21	28	27	31	292	24	31	34	89	471

See footnotes at end of table.

Table 2. New science and engineering doctorates by subfield and citizenship status: 1960-82--con.

Non-U.S., temporary residents

Field of study	Year of doctorate												
	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	Total 1960-69	1970	1971
Mathematical sciences	44	44	65	61	80	76	97	92	112	114	785	134	152
Algebra	4	2	11	13	7	9	15	13	12	15	101	14	16
Analysis/funct anyl(28).	5	7	8	9	21	15	18	18	19	28	151	28	27
Geometry	1	2	3	0	5	1	3	4	6	5	30	6	7
Logic	0	0	1	4	4	4	2	2	5	1	23	4	4
Number theory	3	3	4	1	2	0	5	1	5	4	28	3	6
Probability/math stat(27)	12	17	23	17	21	23	26	21	23	5	188	14	9
Topology	2	2	3	4	7	6	4	8	11	9	56	12	12
Topological algebra(28).	3	1	3	5	0	5	3	1	-	-	21	-	-
Computing theory	1	1	3	2	2	2	4	5	10	12	42	8	16
Computer science(13) ...	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations research(29).	-	-	-	-	-	-	-	-	-	-	-	-	-
Applied mathematics	6	6	5	6	9	7	13	17	12	16	97	18	18
Mathematics, general ...	4	1	1	0	2	3	1	2	8	11	33	18	22
Mathematics, other	0	2	0	0	0	1	3	0	1	8	15	9	15
Life sciences	239	265	313	299	385	479	488	480	556	542	4046	560	549
Biological sciences	148	173	201	209	250	307	313	298	360	340	2599	361	312
Biochemistry	28	50	51	40	59	69	72	82	78	84	613	69	66
Biophysics	1	3	3	4	5	3	10	6	10	5	50	5	9
Biometry, biostatistics.	0	2	2	4	7	4	5	2	4	2	32	6	5
Anatomy	0	5	4	8	7	8	2	4	5	8	51	10	9
Cytology(30)	-	-	3	3	2	5	5	3	1	2	24	4	3
Embryology	0	0	0	1	2	5	1	0	2	1	12	2	2
Immunology(31)	-	-	-	-	-	-	-	-	-	-	-	-	-
Botany	14	17	25	19	19	28	19	13	28	15	197	19	16
Ecology	2	1	3	4	3	2	5	3	6	7	36	10	5
Hydrobiology(8)	1	0	0	1	1	1	2	0	0	0	6	1	1
Microbiology/bacteriol(32)	19	23	20	33	26	40	48	38	39	34	320	44	23
Animal/plant physiol(33)	10	11	8	-	-	-	-	-	-	-	29	-	-
Animal physiology(33) ..	1	0	7	11	14	13	20	21	34	21	142	33	24
Plant physiology(33) ...	2	0	8	16	13	20	19	18	21	21	138	15	17
Nutrition(34)	6	0	1	2	-	-	-	-	-	-	9	-	-
Zoology	9	14	12	13	14	24	12	10	23	18	149	19	15
Genetics	20	19	17	24	31	35	32	42	39	27	286	31	34
Entomology	28	17	19	15	31	23	28	32	31	35	259	30	30
Molecular biology(17) ..	-	-	-	-	-	-	-	-	-	10	10	7	5
Nutrition/dietetics(11).	-	-	-	-	-	-	-	-	-	-	-	-	-
Parasitology(9)	-	-	-	-	-	-	-	-	-	-	-	-	-
Pathology	3	1	7	2	4	8	6	10	10	4	55	8	10
Pharmacology	0	8	7	9	10	15	22	10	18	13	112	19	6
Neurosciences(35)	0	0	0	0	0	0	0	0	0	0	0	0	0
Biological sci, general.	3	0	0	0	0	1	0	1	5	10	20	10	16
Biological sci, other ..	1	2	4	0	2	3	5	3	6	23	49	21	16
Agricultural sciences	91	92	112	90	135	172	175	182	196	202	1447	199	237
Agronomy	30	35	45	28	47	64	57	52	62	62	485	51	57
Animal husbandry	11	12	19	13	26	37	32	34	33	27	244	19	21
Food sci/technology(17).	-	-	-	-	-	-	-	-	-	12	12	6	25
Fish/wildlife	1	0	4	4	5	3	2	0	1	2	22	4	4
Forestry	5	4	6	0	12	3	7	14	13	8	72	11	12
Horticulture	14	10	16	13	15	22	31	22	17	18	178	22	18
Soils/soil science(36) .	-	-	-	-	-	-	-	-	0	16	16	20	27
Animal sci/nutrition(37)	-	-	-	-	-	-	-	-	-	0	0	0	0
Phytopathology	26	26	19	23	20	33	35	32	36	37	287	32	31
Agriculture, general ...	1	0	0	1	1	1	3	0	6	3	16	2	1
Agriculture, other	3	2	3	8	9	9	8	28	28	17	115	32	41
Social sciences	119	140	152	138	164	198	227	237	261	280	1916	362	388
Anthropology	2	6	5	4	10	5	7	7	6	9	61	15	11
Archeology	1	0	0	0	0	0	2	2	2	1	8	0	3
Hist/phil of science(38)	-	-	-	-	-	-	-	-	-	-	-	-	3
Linguistics	5	8	12	9	12	13	16	14	15	17	121	22	30
Sociology	13	13	15	25	10	19	24	34	36	38	227	45	62
Economics	62	71	67	62	90	109	116	116	144	109	946	141	146
Econometrics	4	3	5	5	4	3	10	8	5	7	54	6	4
Agricultural economics(17)	-	-	-	-	-	-	-	-	-	26	26	33	50
Statistics(39)	-	-	-	-	-	-	-	6	9	17	32	31	21
Geography	10	10	10	6	12	7	12	10	7	19	103	20	21
Pol sci, public admin(40)	22	29	38	27	26	42	40	40	37	37	338	49	37
Political science(40) ..	-	-	-	-	-	-	-	-	-	-	-	-	-
Psychology	27	22	43	23	37	27	41	36	42	61	359	58	71
Clinical	5	4	11	6	8	4	9	8	6	10	71	5	9
Counseling/guidance	1	3	2	0	1	2	0	2	2	8	21	2	5
Developmental/gerontol .	1	0	1	3	1	2	3	1	4	3	19	4	4
Educational	2	1	4	1	0	0	0	1	5	3	17	2	1
School	0	0	0	0	1	1	0	1	1	0	4	0	0
Exper, compar, physiol(41)	9	4	5	0	0	0	0	0	-	-	18	-	-
Experimental(41)	-	0	4	8	11	6	9	7	5	13	63	11	16
Comparative(41)	-	0	4	1	0	2	0	0	0	0	7	1	0
Physiological(41)	-	0	0	1	3	4	4	4	3	0	19	5	7
Industrial/personnel ...	1	1	1	1	3	2	0	1	3	5	18	3	6
Personality	1	0	2	1	2	0	1	1	1	3	12	3	1
Psychometrics	0	1	2	0	3	2	4	0	2	0	14	2	1
Social	6	7	6	1	4	2	7	6	5	8	52	17	11
Psychology, general	1	0	1	0	0	0	3	4	4	4	17	2	9
Psychology, other	0	1	0	0	0	0	1	0	1	4	7	1	1
Total, non-sci/engineering(43)	161	204	223	237	281	328	312	378	463	464	3051	553	604
Total, all fields	897	1050	1244	1251	1463	1753	1908	2048	2268	2334	16216	2572	2690

See footnotes at end of table.

Table 2. New science and engineering doctorates by subfield and citizenship status: 1960-82--con.

Non-U.S., temporary residents

Field of study	Year of doctorate 1972	1973	1974	1975	1976	1977	1978	1979	Total 1970-79	1980	1981	1982	Total 1980-82	Total 1960-82
Mathematical sciences	169	173	224	197	183	170	181	181	1764	182	226	251	659	3208
Algebra	17	11	18	20	19	12	13	10	150	10	14	12	36	287
Analysis/funct anyl(28).	26	32	34	36	25	33	19	22	282	17	30	31	78	511
Geometry	7	6	8	4	7	7	4	4	60	4	2	8	14	104
Logic	5	3	1	4	7	4	5	3	40	1	1	1	3	66
Number theory	3	4	4	6	3	4	1	1	35	6	3	3	12	75
Probability/math stat(27)	23	29	33	31	45	31	38	37	290	39	50	53	142	620
Topology	9	10	11	12	12	13	6	8	105	6	10	5	21	182
Topological algebra(28).	-	-	-	-	-	-	-	-	-	-	-	-	-	21
Computing theory	21	25	37	27	16	12	7	3	172	1	3	4	8	222
Computer science(13) ...	-	-	-	-	-	3	26	32	61	43	40	59	142	203
Operations research(29).	-	0	9	15	4	10	8	10	56	12	14	15	41	97
Applied mathematics	20	24	31	11	23	17	24	29	215	18	27	24	69	381
Mathematics, general ...	21	24	32	27	21	18	21	22	226	18	23	27	68	327
Mathematics, other	17	5	6	4	1	6	9	0	72	7	9	9	25	112
Life sciences	537	548	634	584	557	575	559	562	5665	592	613	601	1806	11517
Biological sciences	305	314	363	317	313	318	292	297	3192	296	288	342	926	6717
Biochemistry	46	51	66	57	65	54	66	51	591	53	43	49	145	1349
Biophysics	14	17	16	9	10	18	5	13	116	8	13	15	36	202
Biometry, biostatistics.	6	5	12	4	7	10	7	3	63	6	7	7	20	115
Anatomy	4	3	4	7	1	6	9	5	58	9	4	10	23	132
Cytology(30)	0	3	0	6	0	1	3	0	20	2	4	1	7	51
Embryology	2	1	2	2	2	0	0	0	13	0	1	1	2	27
Immunology(31)	2	2	6	5	12	6	6	3	42	6	6	10	22	64
Botany	19	15	22	17	17	12	15	15	167	11	12	17	40	404
Ecology	9	13	12	11	4	11	8	5	88	9	10	11	30	154
Hydrobiology(8)	1	1	0	0	0	0	0	0	4	-	-	-	-	10
Microbiology/bacteriol(32)	31	20	35	27	26	22	31	19	278	21	32	33	86	684
Animal/plant physiol(33)	-	-	-	-	-	-	-	-	-	-	-	-	-	29
Animal physiology(33) ..	24	22	23	19	17	31	19	14	226	16	14	31	61	429
Plant physiology(33) ...	14	18	19	16	11	13	6	13	140	4	11	8	23	301
Nutrition(34)	-	-	-	-	-	-	-	-	-	-	-	-	-	9
Zoology	15	13	13	16	14	13	6	9	133	10	11	7	28	310
Genetics	24	25	29	25	30	11	15	17	241	22	15	18	55	582
Entomology	31	35	32	34	26	33	22	36	309	31	27	37	95	663
Molecular biology(17) ..	10	10	11	16	9	13	14	15	110	18	7	18	43	163
Nutrition/dietetics(11).	-	-	-	-	16	22	17	14	69	9	14	18	41	110
Parasitology(9)	-	0	3	3	0	2	3	5	16	5	3	4	12	28
Pathology	8	7	9	5	8	8	4	10	77	10	16	12	38	170
Pharmacology	13	19	16	8	11	11	12	18	133	15	16	14	45	290
Neurosciences(35)	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Biological sci, general.	11	13	13	11	17	11	15	17	134	18	13	11	42	196
Biological sci, other ..	21	21	20	21	10	10	9	15	164	13	9	9	31	244
Agricultural sciences	232	234	271	267	244	257	267	265	2473	296	325	259	880	4800
Agronomy	41	52	58	54	66	50	47	57	533	64	60	53	177	1195
Animal husbandry	13	5	3	4	3	7	4	4	83	5	4	2	11	338
Food sci/technology(17).	20	28	28	37	25	46	34	35	284	38	49	45	132	428
Fish/wildlife	1	4	7	5	4	5	8	4	46	13	2	8	23	91
Forestry	11	16	23	21	22	11	22	22	171	18	21	13	52	295
Horticulture	29	15	17	22	20	20	23	16	202	27	32	20	79	459
Soils/soil science(36) .	39	41	45	30	32	37	40	38	349	32	40	30	102	467
Animal sci/nutrition(37)	18	31	39	35	26	27	34	34	244	30	54	28	112	356
Phytopathology	28	23	25	29	26	25	29	21	269	37	27	23	87	643
Agriculture, general ...	2	0	4	7	3	6	3	5	33	1	4	3	8	57
Agriculture, other	30	19	22	23	17	23	23	29	259	31	32	34	97	471
Social sciences	415	494	482	492	509	505	472	489	4608	441	504	514	1459	7983
Anthropology	8	16	17	23	28	25	32	27	202	17	25	30	72	335
Archeology	0	1	2	3	2	1	1	4	17	0	0	2	2	27
Hist/phil of science(38)	3	1	3	1	4	1	2	2	20	0	4	3	7	27
Linguistics	24	35	31	33	33	39	40	36	323	39	47	45	131	575
Sociology	54	60	65	84	68	66	55	61	620	63	69	54	186	1033
Economics	153	183	182	171	194	201	178	197	1751	187	200	195	582	3279
Econometrics	6	10	6	9	8	11	7	5	72	5	5	9	19	145
Agricultural economics(17)	49	57	62	58	59	54	62	69	553	54	64	73	191	770
Statistics(39)	17	17	13	16	12	17	15	11	170	9	18	20	47	249
Geography	27	34	26	19	20	23	28	16	234	20	20	23	63	400
Pol sci, public admin(40)	69	80	75	75	6	-	-	-	391	-	-	-	-	729
Political science(40) ..	-	-	0	0	75	67	52	61	255	47	52	60	159	414
Psychology	78	80	84	101	86	73	61	73	765	71	80	65	216	1340
Clinical	8	15	16	15	8	7	12	7	102	12	13	11	36	209
Counseling/guidance	4	4	6	9	7	6	7	7	57	2	10	9	21	99
Developmental/gerontol .	2	7	5	10	6	5	3	7	53	5	3	6	14	86
Educational	6	4	2	4	3	7	3	8	40	1	4	1	6	63
School	0	0	1	1	2	0	0	2	6	1	1	1	3	13
Exper, compar, physiol(41)	-	-	-	-	-	-	-	-	-	-	-	-	-	18
Experimental(41)	11	13	12	12	13	16	9	10	123	10	9	9	28	214
Comparative(41)	0	1	0	1	2	0	0	0	5	0	0	1	1	13
Physiological(41)	5	5	7	8	3	6	6	3	55	2	3	3	8	82
Industrial/personnel ...	3	5	6	4	8	3	2	2	42	2	2	3	7	67
Personality	1	1	2	0	5	1	1	1	16	1	1	0	2	30
Psychometrics	5	0	3	2	2	2	1	2	20	1	3	0	4	38
Social	20	14	16	19	18	7	8	7	137	6	7	10	23	212
Psychology, general	4	7	5	10	6	8	3	8	62	7	10	3	20	99
Psychology, other	9	4	3	6	3	5	6	9	47	21	14	8	43	97
Total, non-sci/engineering(43)	662	747	717	794	854	846	915	980	7672	1000	1048	1143	3191	13916
Total, all fields	2831	3174	3359	3536	3529	3448	3421	3586	32146	3643	3940	4189	11772	60134

See footnotes at end of table.

Table 2. New science and engineering doctorates by subfield and citizenship status: 1960-82--con.

Unknown citizenship

	Year of doctorate												
Field of study	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	Total 1960-69	1970	1971
Total, science/engineering ...	47	91	88	132	181	155	296	249	246	323	1808	179	274
Physical sciences	11	28	21	45	44	33	79	61	64	82	468	56	72
Physics/astronomy	6	14	14	19	32	19	41	41	33	46	265	32	45
Astronomy/astrophysics(1)	0	0	0	0	2	0	1	3	1	0	7	-	-
Astronomy(1)	-	-	-	-	-	-	-	-	-	0	0	4	2
Astrophysics(1)	-	-	-	-	-	-	-	-	-	0	0	0	0
Atomic/molecular	2	2	0	0	0	1	2	3	0	2	12	0	0
Electromagnetism(2)	0	1	1	0	0	0	2	1	0	0	5	0	0
Mechanics(3)	0	1	0	0	0	0	0	0	0	0	1	0	0
Fluids	0	0	0	0	0	0	0	0	0	0	0	0	0
Plasma(4)	-	-	-	-	-	-	-	0	0	0	0	0	0
Optics	1	0	0	0	0	0	0	0	0	0	1	0	1
Thermal(5)	0	1	0	0	0	0	1	1	0	0	3	0	0
Elementary particles ...	0	0	1	2	1	6	3	4	0	0	17	1	0
Nuclear structure	0	2	1	4	0	0	3	2	1	0	13	0	1
Solid state	0	3	0	1	1	1	3	0	0	0	9	1	3
Physics, general	3	4	11	9	24	11	20	21	30	39	172	19	27
Physics, other	0	0	0	3	4	0	6	6	1	5	25	7	11
Chemistry	5	14	7	26	12	14	38	20	31	36	203	24	27
Analytical	1	0	1	0	0	0	0	2	0	0	4	0	0
Inorganic	0	0	0	0	0	1	2	0	1	0	4	2	1
Organic	0	0	0	1	1	1	4	4	0	0	11	6	1
Nuclear chemistry	0	2	1	0	1	0	1	0	0	0	5	0	0
Physical	0	6	1	1	2	4	9	2	2	2	29	0	3
Theoretical chemistry ..	0	0	0	0	0	1	2	0	0	0	3	0	0
Agricultural/food(8) ...	0	0	0	0	1	0	3	0	0	0	4	1	0
Pharmaceutical	0	0	0	0	0	1	4	1	1	0	7	0	1
Polymer(9)	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemistry, general	4	6	4	24	6	6	12	11	27	34	136	14	20
Chemistry, other	0	0	0	0	1	0	1	0	0	0	2	1	1
Earth, env & marine sciences	2	0	2	5	9	3	8	12	9	11	61	6	1
Mineral, petrol, geochem(10)	0	0	0	0	1	0	0	1	0	0	2	-	-
Mineralogy, petrology(10)	-	-	-	-	-	-	-	-	-	0	0	0	0
Geochemistry(10)	-	-	-	-	-	-	-	-	0	0	0	0	0
Stratigraphy, sediment .	0	0	0	0	0	0	0	0	0	0	0	1	0
Paleontology	0	0	0	2	0	0	0	1	0	0	3	0	0
Structural geology	2	0	0	0	0	0	0	0	0	0	2	1	0
Geophysics	0	0	0	0	1	1	1	0	0	1	4	1	0
Geophysics, solid earth(11)	-	-	-	-	-	-	-	-	-	-	-	-	-
Hydrology/water res(12).	0	0	0	0	0	0	0	0	1	0	1	0	0
Oceanography	0	0	0	0	0	0	2	1	0	1	4	0	0
Meteorology(14)	0	0	0	1	1	1	1	0	0	0	4	0	0
Atmospheric sci, other(11)	-	-	-	-	-	-	-	-	-	-	-	-	-
Environ science, general	-	-	-	-	-	-	-	-	-	-	-	-	-
Environ science, other .	-	-	-	-	-	-	-	-	-	-	-	-	-
Applied geology(15)	0	0	0	0	0	0	1	4	3	0	8	-	-
Applied geology(15)	-	-	-	-	-	-	-	-	0	0	0	0	0
Fuel technology(15)	-	-	-	-	-	-	-	1	0	0	1	1	0
Earth science, general .	-	-	2	0	6	1	3	4	4	8	28	2	1
Earth science, other ...	-	-	0	2	0	0	0	0	1	1	4	0	0
Engineering	4	6	8	15	20	41	82	40	41	69	326	19	32
Aeronaut/astronautical(16)	0	0	0	0	1	1	3	1	0	4	10	0	0
Agricultural	0	0	0	0	0	0	0	0	0	0	0	0	0
Biomedical(17)	-	-	-	-	-	-	-	-	-	0	0	0	1
Chemical	3	0	0	1	4	2	13	2	3	2	30	1	4
Civil	0	1	4	4	5	6	7	6	9	9	51	1	3
Ceramic	0	0	0	0	0	0	0	0	0	0	0	0	0
Computer(18)	-	-	-	-	-	-	-	-	-	-	-	-	-
Electrical	1	0	2	6	3	11	19	15	7	13	77	4	9
Electronics	0	1	0	0	1	0	0	1	0	1	4	0	2
Industrial	0	1	0	0	0	3	1	2	1	1	9	0	0
Nuclear engineering(19).	-	-	-	-	-	-	-	-	-	8	8	1	1
Engineering mechanics ..	0	0	0	0	0	0	2	0	1	4	7	1	1
Engineering physics(19).	0	0	0	0	1	2	2	1	0	0	6	0	0
Mechanical	0	0	1	3	2	5	16	2	4	16	49	1	0
Metallurgy/phys met(20).	0	1	0	1	3	10	15	6	2	2	40	3	3
Systems design(18)	0	0	0	0	0	0	0	0	0	0	0	0	0
Operations research(21).	-	-	-	-	-	-	-	-	-	-	-	-	0
Fuel technology(22)	-	-	-	-	-	-	-	-	-	-	-	-	-
Sanitary/environmental(23)	0	0	0	0	0	0	0	1	0	0	1	1	0
Mining(25)	-	-	-	-	-	-	-	-	-	0	0	0	1
Materials science(17) ..	-	-	-	-	-	-	-	-	-	0	0	0	0
Engineering, general ...	0	1	1	0	0	0	2	1	10	4	19	5	3
Engineering, other	0	1	0	0	0	1	2	2	4	5	15	1	4

See footnotes at end of table.

Table 2. New science and engineering doctorates by subfield and citizenship status: 1960-82--con.

Unknown citizenship

Field of study	Year of doctorate 1972	1973	1974	1975	1976	1977	1978	1979	Total 1970-79	1980	1981	1982	Total 1980-82	Total 1960-82
Total, science/engineering ...	308	328	831	355	338	429	486	435	3983	442	567	743	1752	7543
Physical sciences	55	60	127	65	38	53	53	54	633	60	82	83	225	1326
Physics/astronomy	22	27	55	22	22	24	18	31	298	28	38	31	97	660
Astronomy/astrophysics(1)	-	-	-	-	-	-	-	-	-	-	-	-	-	7
Astronomy(1)	1	0	0	1	2	0	0	0	10	1	1	0	2	12
Astrophysics(1)	0	0	2	0	0	1	0	1	4	0	0	0	0	4
Atomic/molecular	0	0	0	1	0	1	0	0	2	0	1	0	1	15
Electromagnetism(2)	0	0	0	0	0	0	0	0	0	-	-	-	-	5
Mechanics(3)	0	0	0	0	0	-	-	-	-	-	-	-	-	1
Fluids	0	0	1	0	0	0	0	0	1	1	0	0	1	2
Plasma(4)	0	0	2	0	0	0	0	0	2	0	0	0	0	2
Optics	0	0	0	0	0	0	0	0	1	0	2	0	2	4
Thermal(5)	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Elementary particles ...	0	0	0	1	0	2	0	0	4	0	0	0	0	21
Nuclear structure	0	0	0	0	0	0	0	0	1	0	0	0	0	14
Solid state	1	1	1	1	1	0	0	0	9	1	1	0	2	20
Physics, general	18	22	45	16	19	18	18	29	231	25	32	28	85	488
Physics, other	2	4	4	2	0	2	0	1	33	0	1	3	4	62
Chemistry	33	33	72	43	16	29	35	23	335	32	44	52	128	606
Analytical	0	0	0	0	0	0	2	0	2	0	0	0	0	6
Inorganic	0	1	0	0	0	1	1	0	6	0	2	1	3	13
Organic	3	2	1	2	2	0	3	0	20	2	1	2	5	36
Nuclear chemistry	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Physical	0	3	2	1	1	5	1	2	18	0	1	1	2	49
Theoretical chemistry ..	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Agricultural/food(8) ...	0	0	0	1	1	0	1	0	4	-	-	-	-	8
Pharmaceutical	0	0	3	1	0	1	3	1	10	2	1	2	5	22
Polymer(9)	-	0	1	0	0	0	0	0	1	0	0	0	0	1
Chemistry, general	28	27	65	37	11	21	24	19	266	28	38	44	110	510
Chemistry, other	2	0	0	1	1	1	0	1	8	0	1	2	3	13
Earth, env & marine sciences	9	7	24	9	9	13	15	9	102	10	10	20	40	203
Mineral, petrol, geochem(10)	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Mineralogy, petrology(10)	0	0	1	2	0	1	0	0	4	0	0	0	0	4
Geochemistry(10)	1	1	1	1	0	1	0	0	5	1	0	1	2	7
Stratigraphy, sediment .	0	0	0	0	0	0	0	0	1	0	0	1	1	2
Paleontology	0	0	1	0	0	0	1	1	3	0	0	0	0	6
Structural geology	0	0	0	0	0	0	0	0	1	1	0	0	1	4
Geophysics	0	2	2	1	1	-	-	-	7	-	-	-	-	11
Geophysics, solid earth(11)	0	0	0	0	0	1	2	1	4	3	1	2	6	10
Hydrology/water res(12).	0	0	1	1	0	0	0	0	2	0	1	2	3	6
Oceanography	1	1	1	1	2	1	0	1	8	2	1	5	8	20
Meteorology(14)	1	0	0	1	0	-	-	-	2	-	-	-	-	6
Atmospheric sci, other(11)	-	-	-	-	1	3	3	0	7	0	0	0	0	7
Environ science, general	0	0	0	0	0	1	1	0	2	0	0	0	0	2
Environ science, other .	1	0	0	0	2	1	2	2	8	0	0	2	2	10
Applied geology(15)	-	-	-	-	-	-	-	-	-	-	-	-	-	8
Applied geology(15)	0	0	0	0	0	0	0	1	1	0	1	0	1	2
Fuel technology(15)	0	0	0	0	0	2	0	0	3	-	-	-	-	4
Earth science, general .	2	3	17	2	2	1	4	3	37	3	6	6	15	80
Earth science, other ...	3	0	0	0	1	1	2	0	7	0	0	1	1	12
Engineering	32	43	176	53	74	72	69	60	630	74	115	155	344	1300
Aeronaut/astronautical(16)	2	2	2	1	2	2	2	1	14	3	6	4	13	37
Agricultural	1	0	4	0	1	1	0	0	7	1	0	1	2	9
Biomedical(17)	0	0	0	1	2	1	2	0	7	2	1	1	4	11
Chemical	3	8	9	4	11	4	5	4	53	8	13	19	40	123
Civil	1	4	37	9	15	3	8	9	90	6	13	13	32	173
Ceramic	0	0	3	0	0	1	0	2	6	0	0	1	1	7
Computer(18)	-	-	-	0	3	0	0	1	4	0	1	1	2	8
Electrical	7	10	53	9	15	21	19	13	160	17	24	35	76	313
Electronics	0	0	0	0	1	0	0	0	3	0	1	0	1	8
Industrial	0	1	6	2	1	3	0	5	18	5	4	2	11	35
Nuclear engineering(19).	2	0	3	2	3	5	2	2	21	5	6	6	17	46
Engineering mechanics ..	1	1	3	0	0	1	4	2	14	4	3	1	8	29
Engineering physics(19).	0	1	0	0	0	0	0	0	1	2	0	0	2	9
Mechanical	4	3	11	6	2	12	4	3	46	7	11	13	31	126
Metallurgy/phys met(20).	0	3	5	0	1	1	2	1	19	2	3	8	13	72
Systems design(18)	-	-	-	0	0	2	1	3	6	0	2	2	4	10
Operations research(21).	1	2	1	0	0	3	1	1	9	0	0	2	2	11
Fuel technology(22)	-	1	6	2	0	0	0	2	11	0	2	4	6	17
Sanitary/environmental(23)	0	0	1	0	1	0	2	0	5	0	1	2	3	9
Mining(25)	0	0	0	1	0	0	0	0	2	0	1	1	2	4
Materials science(17) ..	0	2	7	8	7	6	1	2	33	4	5	17	26	59
Engineering, general ...	5	3	15	6	4	1	9	5	56	7	13	14	34	09
Engineering, other	5	2	10	2	5	5	7	4	45	1	5	8	14	74

See footnotes at end of table.

Table 2. New science and engineering doctorates by subfield and citizenship status: 1960-82--con.

Unknown citizenship

Field of study	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	Total 1960-69	1970	1971
	Year of doctorate												
Total, science/engineering ...	47	91	88	132	181	155	296	249	246	323	1808	179	274
Mathematical sciences	3	9	4	10	10	15	16	19	18	19	123	15	12
Algebra	0	0	0	0	0	0	0	1	0	0	1	0	0
Analysis/funct anyl(26).	0	1	0	1	1	0	1	0	0	0	4	1	0
Geometry	0	0	0	0	0	0	0	0	1	0	1	0	0
Logic	0	0	0	0	0	0	0	1	0	1	2	0	0
Probability/math stat(27)	0	1	1	0	2	3	2	2	1	0	12	2	0
Topology	0	0	0	1	0	0	0	0	0	0	1	0	0
Computing theory	0	0	0	0	0	0	0	3	1	0	4	0	0
Computer science(13) ...	-	-	-	-	-	-	-	-	-	-	-	-	-
Operations research(29).	-	-	-	-	-	-	-	-	-	-	-	-	-
Applied mathematics	1	6	0	0	0	1	2	1	1	4	16	6	1
Mathematics, general ...	2	1	3	8	7	9	10	10	13	14	77	5	10
Mathematics, other	0	0	0	0	0	2	1	1	1	0	5	1	1
Life sciences	11	18	15	16	35	27	41	39	40	45	287	28	81
Biological sciences	10	16	15	12	33	20	30	36	31	40	243	25	78
Biochemistry	4	2	1	1	6	5	10	7	5	5	46	5	12
Biophysics	0	0	0	0	1	0	0	3	1	4	9	0	5
Biometry, biostatistics.	0	0	0	0	0	0	0	0	0	0	0	0	1
Anatomy	0	0	1	0	0	0	1	0	0	0	2	3	4
Cytology(30)	-	-	0	1	0	0	0	0	0	0	1	0	1
Embryology	0	0	0	1	0	1	1	0	0	0	3	0	0
Immunology(31)	-	-	-	-	-	-	-	-	-	-	-	-	-
Botany	0	4	2	1	5	2	2	3	2	3	24	0	0
Ecology	0	0	0	0	0	0	0	0	0	0	0	0	0
Microbiology/bacteriol(32)	0	1	1	2	5	0	1	2	4	1	17	1	9
Animal/plant physiol(33)	3	0	1	-	-	-	-	-	-	-	4	-	-
Animal physiology(33) ..	0	2	2	1	1	2	4	3	0	3	18	5	6
Plant physiology(33) ...	0	0	0	0	0	0	0	1	0	0	1	0	0
Zoology	1	3	2	2	9	3	2	5	0	1	28	0	2
Genetics	0	2	1	0	1	0	1	1	1	3	10	2	0
Entomology	1	0	0	2	1	4	0	3	0	2	13	0	1
Molecular biology(17) ..	-	-	-	-	-	0	0	0	0	1	1	0	0
Nutrition/dietetics(11).	-	-	-	-	-	-	-	-	-	-	-	-	-
Parasitology(9)	-	-	-	-	-	-	-	-	-	-	-	-	-
Pathology	0	1	0	0	0	0	0	0	0	0	1	0	5
Pharmacology	1	0	2	1	1	3	1	1	2	1	13	2	4
Neurosciences(35)	0	0	0	0	0	0	0	0	0	0	0	0	0
Biological sci, general.	0	1	2	0	0	0	6	5	14	14	42	4	15
Biological sci, other ..	0	0	0	0	3	0	1	2	2	2	10	3	15
Agricultural sciences	1	2	0	4	2	7	11	3	9	5	44	3	3
Agronomy	0	0	0	1	0	2	6	0	0	1	10	0	0
Animal husbandry	0	0	0	2	0	2	2	3	0	1	10	2	1
Food sci/technology(17).	-	-	-	-	-	-	-	-	-	0	0	0	0
Fish/wildlife	1	0	0	0	0	0	0	0	0	0	1	0	0
Forestry	0	0	0	0	0	1	0	0	1	0	2	1	0
Horticulture	0	2	0	0	0	1	0	0	0	1	4	0	0
Soils/soil science(36) .	-	-	-	-	-	-	-	-	3	1	4	0	0
Animal sci/nutrition(37)	-	-	-	-	-	-	-	-	-	0	0	0	0
Phytopathology	0	0	0	0	1	1	2	0	1	0	5	0	1
Agriculture, general ...	0	0	0	0	0	0	0	0	1	0	1	0	1
Agriculture, other	0	0	0	1	1	0	1	0	3	1	7	0	0
Social sciences	13	21	28	33	53	28	48	59	58	63	404	39	44
Anthropology	0	0	3	2	5	2	1	5	2	4	24	7	4
Archeology	0	0	0	0	0	0	0	0	0	1	1	0	0
Hist/phil of science(38)	-	-	-	-	-	-	-	-	-	-	-	-	0
Linguistics	0	1	1	0	2	1	3	2	3	4	17	1	5
Sociology	2	3	5	5	6	2	3	11	13	13	63	3	7
Economics	4	7	11	15	24	12	25	21	16	19	154	11	9
Econometrics	0	0	0	0	0	0	1	0	0	1	2	0	0
Agricultural economics .	-	-	-	-	-	-	-	-	-	0	0	0	1
Statistics(39)	-	-	-	-	-	-	-	2	1	2	5	0	2
Geography	1	1	0	2	1	1	0	0	1	2	9	3	0
Pol sci, public admin(40)	6	9	8	9	15	10	15	18	22	17	129	14	16
Political science(40) ..	-	-	-	-	-	-	-	-	-	-	-	-	-
Psychology	3	9	10	8	10	8	22	19	16	34	139	16	32
Clinical	0	1	1	1	1	0	2	2	1	1	10	2	5
Counseling/guidance	2	0	0	0	1	0	0	0	0	0	3	1	2
Developmental/gerontol .	0	0	2	2	0	1	2	0	0	1	8	0	0
Educational	0	0	0	0	0	0	0	2	0	1	3	0	0
School	0	0	0	0	0	0	0	1	0	0	1	0	1
Experimental(41)	-	3	1	1	3	2	1	1	0	0	12	2	0
Comparative(41)	-	0	0	0	1	0	0	0	0	0	1	0	0
Physiological(41)	0	1	0	0	0	1	1	0	0	1	4	0	0
Industrial/personnel ...	0	0	0	0	1	0	0	1	0	0	2	0	0
Personality	0	2	1	0	0	0	1	0	0	0	4	0	0
Psychometrics	0	1	1	1	0	1	0	0	0	0	4	0	0
Social	1	1	0	2	1	2	3	3	0	1	14	0	2
Psychology, general	0	0	4	1	1	1	11	4	15	18	55	9	7
Psychology, other	0	0	0	0	1	0	1	5	0	11	18	2	15
Total, non-sci/engineering(43)	41	55	53	66	92	100	135	201	148	310	1201	256	238
Total, all fields	88	146	141	198	273	255	431	450	394	633	3009	435	512

See footnotes at end of table.

Table 2. New science and engineering doctorates by subfield and citizenship status: 1960-82--con.

Unknown citizenship

Field of study	Year of doctorate 1972	1973	1974	1975	1976	1977	1978	1979	Total 1970-79	1980	1981	1982	Total 1980-82	Total 1960-82
Mathematical sciences	17	27	40	27	17	25	22	20	222	29	21	35	85	430
Algebra	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Analysis/funct anyl(26).	0	2	0	0	0	1	1	0	5	0	0	1	1	10
Geometry	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Logic	1	0	0	0	0	0	0	0	1	0	0	0	0	3
Probability/math stat(27)	2	1	2	2	3	2	0	1	15	1	1	3	5	32
Topology	0	0	0	0	1	0	0	0	1	0	0	0	0	2
Computing theory	0	7	6	3	1	0	0	0	17	0	0	0	0	21
Computer science(13) ...	-	-	-	-	-	3	5	3	11	6	4	6	16	27
Operations research(29).	-	0	2	0	0	1	1	0	4	1	2	0	3	7
Applied mathematics	3	4	4	4	2	1	2	3	30	2	1	0	3	69
Mathematics, general ...	11	13	26	18	10	16	12	13	134	18	13	24	55	266
Mathematics, other	0	0	0	0	0	1	1	0	4	1	0	1	2	11
Life sciences	83	80	187	85	108	106	103	104	965	88	123	142	353	1605
Biological sciences	79	76	164	80	100	95	90	87	874	77	95	120	292	1409
Biochemistry	16	17	21	10	17	19	12	12	141	12	16	20	48	235
Biophysics	7	5	8	14	10	9	7	6	71	6	1	2	9	89
Biometry, biostatistics.	1	0	1	1	0	0	0	0	4	0	1	2	3	7
Anatomy	4	1	11	3	5	8	3	1	43	1	6	7	12	57
Cytology(30)	0	2	0	0	3	2	1	0	9	0	1	3	4	16
Embryology	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Immunology(31)	0	0	1	0	2	5	2	0	10	0	1	4	5	15
Botany	3	1	11	0	2	1	6	1	25	4	7	3	14	63
Ecology	2	0	2	0	0	0	0	0	4	1	3	0	4	8
Microbiology/bacteriol(32)	7	4	17	4	16	7	8	13	86	11	7	12	30	133
Animal/plant physiol(33)	-	-	-	-	-	-	-	-	-	-	-	-	-	6
Animal physiology(33) ..	2	1	8	2	2	3	12	4	43	1	2	3	6	67
Plant physiology(33) ...	0	1	2	1	0	0	0	1	5	2	1	0	3	9
Zoology	1	5	13	5	1	5	6	7	45	4	6	5	15	88
Genetics	4	0	5	4	5	4	2	2	28	3	2	1	6	44
Entomology	1	2	8	1	1	1	4	2	21	3	1	2	6	40
Molecular biology(17) ..	0	1	1	0	1	0	0	1	4	0	4	9	13	18
Nutrition/dietetics(11).	-	-	-	-	1	0	3	3	7	2	4	10	16	23
Parasitology(9)	-	0	1	0	1	0	0	0	2	0	1	0	1	3
Pathology	5	11	9	7	2	8	0	2	49	3	5	2	10	60
Pharmacology	3	2	18	5	8	2	6	6	56	3	5	7	15	84
Neurosciences(35)	-	-	-	-	-	-	-	-	-	-	-	1	1	1
Biological sci, general.	17	16	20	17	14	13	14	18	148	18	16	22	56	246
Biological sci, other ..	6	7	7	6	9	8	4	6	73	3	7	5	15	98
Agricultural sciences	4	4	23	5	8	11	13	17	91	11	28	22	61	196
Agronomy	1	1	6	0	3	2	5	3	21	1	4	3	8	39
Animal husbandry	0	0	0	0	0	1	0	1	5	0	0	0	0	15
Food sci/technology(17).	0	0	2	1	0	2	2	2	9	0	2	2	4	13
Fish/wildlife	0	0	0	0	1	0	0	0	1	1	2	0	3	5
Forestry	0	0	2	1	0	2	0	1	7	1	4	5	10	19
Horticulture	0	0	0	1	1	1	1	2	6	1	5	1	7	17
Soils/soil science(36) .	1	1	2	1	1	2	0	0	8	0	1	1	2	14
Animal sci/nutrition(37)	0	0	7	1	1	0	3	2	14	3	6	5	14	28
Phytopathology	0	2	4	0	0	0	0	4	11	2	1	3	6	22
Agriculture, general ...	0	0	0	0	1	0	0	1	3	0	0	0	0	4
Agriculture, other	2	0	0	0	0	1	2	1	6	2	3	2	7	20
Social sciences	80	68	154	73	63	64	88	85	758	63	96	133	292	1654
Anthropology	11	11	17	10	11	10	13	10	104	7	14	8	29	157
Archeology	0	0	0	0	0	0	0	1	1	0	1	0	1	3
Hist/phil of science(38)	0	0	0	0	1	0	0	1	2	0	0	1	1	3
Linguistics	6	2	9	2	0	6	8	9	48	5	9	15	29	94
Sociology	12	11	36	13	17	11	12	8	130	9	14	20	43	236
Economics	19	21	32	23	15	18	31	19	198	18	32	49	99	451
Econometrics	0	0	0	0	0	0	1	1	2	0	0	0	0	4
Agricultural economics .	2	1	2	1	3	2	4	6	22	3	1	3	7	29
Statistics(39)	2	4	4	4	1	1	2	0	20	0	1	2	3	28
Geography	3	2	13	4	2	3	2	4	36	5	4	8	17	62
Pol sci, public admin(40)	25	16	41	16	1	-	-	-	129	-	-	-	-	258
Political science(40) ..	-	-	0	0	12	13	15	26	66	16	20	27	63	129
Psychology	32	43	123	43	29	96	136	123	673	118	120	175	413	1225
Clinical	2	4	15	5	3	9	75	69	189	47	24	40	111	310
Counseling/guidance	1	1	1	1	2	2	4	2	17	3	1	4	8	28
Developmental/herontol .	0	0	8	0	0	0	2	0	10	0	0	0	0	18
Educational	2	2	7	3	0	1	2	4	21	5	2	6	13	37
School	0	2	0	0	0	5	1	4	13	1	2	5	8	22
Experimental(41)	2	1	1	2	2	0	0	1	11	1	2	5	8	31
Comparative(41)	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Physiological(41)	2	0	0	0	0	0	0	1	3	0	1	0	1	8
Industrial/personnel ...	0	1	0	0	1	0	1	0	3	0	0	0	0	5
Personality	2	1	0	0	0	0	0	1	4	0	0	0	0	8
Psychometrics	0	0	0	0	0	0	0	1	1	0	0	0	0	5
Social	1	2	0	0	0	0	0	2	7	0	3	4	7	28
Psychology, general	10	20	88	28	19	49	46	34	310	38	61	45	144	509
Psychology, other	10	9	3	4	2	30	5	4	84	23	24	66	113	215
Total, non-sci/engineering(43)	330	342	688	265	316	352	332	411	3930	420	501	583	1504	6235
Total, all fields	638	670	1519	620	654	781	818	866	7513	862	1068	1326	3256	13778

See footnotes at end of table.

SOURCES: National Science Foundation and National Research Council

(1) "Astronomy/astrophysics" was included in the field taxonomy until 1969 when separate entries were introduced. The dash (-) signifies that data are not available for a given time period. For example, data for "astronomy/astrophysics" are not available after 1969, while data for "astronomy" or "astrophysics" are not available prior to 1969. A zero (0) signifies that no doctorates were produced.

(2) This subfield was originally called "Electricity and Magnetism." In 1966 the name was changed to "Electromagnetism." In 1980 this subfield was deleted from the taxonomy.

(3) "Thermal physics" was originally shown as one subfield, "Mechanics and Heat." In 1960 this subfield was separated into "Mechanics" and "Heat (Thermal)." The latter was subsequently changed to "Thermal Phenomena" in 1963 and then to "Thermal Physics" in 1967. "Mechanics" was deleted from the taxonomy in 1977.

(4) "Plasma physics" was not added until 1969.

(5) This subfield was added in 1960 under the original name of "Heat (Thermal)." See footnote 3 for more information.

(6) This subfield was deleted in 1962.

(7) This subfield was deleted in 1962, but some entries appear for 1962 and 1963 due to use of outdated forms by some institutions.

(8) This subfield was deleted in 1980.

(9) This subfield was introduced in 1973.

(10) "Mineralogy, petrology, and geochemistry" was split into two separate subfields in 1969.

(11) This subfield was introduced in 1976.

(12) This subfield was originally listed as "Hydrology." "Water Resources" was added to the title in 1977.

(13) This subfield was introduced in 1977.

(14) This subfield was deleted in 1976.

(15) In 1960 "Geophysical Engineering" and "Geological Engineering" were merged into "Geo-engineering." "Geo-engineering" became "Applied Geology, Geological Engineering, Economic Geology, and Petroleum Engineering" in 1962 and was split into "Applied Geology, Geological Engineering and Economic Geology" and "Fuel Technology and Petroleum Engineering" in 1969.

(16) This subfield was originally named "Aeronautical Engineering." In 1966 the term "Astronautical" was added.

(17) This subfield was introduced in 1969.

(18) This subfield was introduced in 1975.

(19) In 1961 "Nuclear Engineering" was deleted from the taxonomy, and previous cases were added to "Engineering Physics." In 1969 "Nuclear Engineering" was reinstated in the taxonomy.

(20) This subfield was originally specified as "Metallurgy and Metallurgical Engineering." The term "Physical" was introduced in 1967.

(21) This subfield was introduced in 1972.

(22) This subfield's full title is "Fuel Technology and Petroleum Engineering." It was added to the Engineering section of the taxonomy in 1972. (See also footnote 15.)

(23) This subfield was originally called "Sanitary Engineering." The term Environmental" was added in 1977.

(24) This subfield was deleted from the taxonomy in 1969.

(25) "Mining Engineering" was originally deleted in 1961 but was restored to the taxonomy in 1969.

(26) This subfield was specified as "Analysis" through 1967. "Functional Analysis" was added in 1968

(27) "Math Statistics" was deleted from the taxonomy in 1969 but was restored in 1972.

(28) This subfield was deleted in 1967.

(29) This subfield was introduced in 1973.

(30) This subfield was introduced in 1962.

(31) This subfield was introduced in 1972.

(32) This subfield was originally called "Microbiology." "Bacteriology" was added in 1970.

(33) In 1962 "Animal and Plant Physiology" was separated into "Animal Physiology" and "Plant Physiology."

(34) This subfield was deleted in 1960.

(35) This subfield was introduced in 1982.

(36) This subfield was added in 1969 under the name of "Range Management." In 1972 the title was changed to "Soils and Soils Science." Previous cases under "Range Management" were converted to "Agriculture, Other."

(37) This subfield was introduced as "Animal Sciences" in 1973. The title was changed to "Animal Science and Animal Nutrition" in 1977.

(38) This subfield was introduced in 1971.

(39) This subfield was introduced in 1967.

(40) "Political Science, Public Administration" was split into two separate subfields in 1976.

(41) "Experimental, Comparative and Physiological Psychology" was split into three separate subfields in 1962.

(42) This subfield was deleted from the published taxonomy in 1962 but "write-in" responses were coded until 1969. Beginning in 1969, write-responses were included with "Psychology, Other."

(43) Non-science/engineering doctorates in this table include doctorates whose field of specialization is unknown.

Table 3. New science and engineering doctorates awarded to U.S. citizens and non-U.S.citizens with permanent visas by subfield and race: 1975-82

All races

Field of study	Year of doctorate 1975	1976	1977	1978	1979	1980	1981	1982	Total 1975-82
Total, science/engineering ...	15261	14851	14387	14056	14184	14112	14175	13825	114851
Physical sciences	2553	2392	2262	2161	2205	2035	2103	2102	17813
Physics/astronomy	1034	987	919	868	870	766	774	740	6958
Astronomy(1)	52	68	61	63	52	48	44	48	436
Astrophysics(1)	58	63	48	64	49	61	56	44	443
Atomic/molecular	112	99	89	76	66	60	54	73	629
Electromagnetism(2)	10	11	9	9	4	-	-	-	43
Mechanics(3)	2	3	0	-	-	-	-	-	5
Acoustics	11	9	9	13	11	21	12	8	94
Fluids	16	19	12	10	14	10	9	9	99
Plasma(4)	44	66	62	59	48	51	55	54	439
Optics	26	44	27	26	36	33	41	33	266
Thermal(5)	8	3	5	8	6	5	4	-	39
Elementary particles ...	104	100	108	108	99	91	98	83	791
Nuclear structure	103	73	79	61	82	57	47	39	541
Solid state	266	228	201	196	195	155	194	184	1619
Physics, general	112	105	115	97	119	95	83	81	807
Physics, other	110	96	94	78	89	79	77	84	707
Chemistry	1519	1405	1343	1293	1335	1269	1329	1362	10855
Analytical	127	136	166	164	189	167	209	171	1329
Inorganic	212	213	172	179	182	167	168	191	1484
Organic	524	438	430	393	404	401	429	428	3447
Nuclear chemistry	20	22	21	13	12	12	11	15	126
Physical	347	308	296	260	289	244	239	288	2269
Theoretical chemistry ..	40	43	30	38	42	40	27	24	284
Agricultural/food(8) ...	5	11	5	4	9	-	-	-	34
Pharmaceutical	59	48	41	45	37	36	44	42	352
Polymer(9)	33	33	42	45	45	44	40	33	315
Chemistry, general	101	98	89	94	80	98	100	100	760
Chemistry, other	51	55	53	58	46	60	62	70	455
Earth, env & marine sciences	530	540	581	540	566	538	488	556	4339
Mineralogy, petrology(10)	31	46	55	34	32	46	27	38	309
Geochemistry(10)	40	42	53	47	50	44	47	43	366
Stratigraphy, sediment .	41	48	32	29	31	38	37	44	300
Paleontology	39	40	26	29	34	20	19	24	231
Structural geology	15	21	19	26	23	19	27	24	174
Geophysics	70	22	-	-	-	-	-	-	92
Geophysics, solid earth(11)	-	31	56	46	70	52	59	65	379
Geomorph/glacial geol ..	29	28	21	23	14	12	12	19	158
Hydrology/water res(12).	17	11	15	22	17	22	12	16	132
Oceanography	78	78	100	84	79	77	63	80	639
Marine sci, other(13) ..	-	-	9	28	29	25	27	35	153
Meteorology(14)	33	18	-	-	-	-	-	-	51
Atmospheric phys/chem(11)	-	14	14	20	15	18	14	17	112
Atmospheric dynamics(11)	-	11	26	19	21	14	23	17	131
Atmospheric sci, other(11)	-	16	35	30	31	37	21	23	193
Environ science, general	56	31	22	15	22	13	27	18	204
Environ science, other .	13	24	26	26	27	24	18	27	185
Applied geology(15)	15	17	17	14	17	22	16	17	135
Fuel technology(15)	3	2	1	0	2	-	-	-	8
Earth science, general .	25	22	34	34	32	38	27	27	239
Earth science, other ...	25	18	20	14	20	17	12	22	148
Engineering	2134	1947	1798	1586	1615	1554	1471	1461	13566
Aeronaut/astronautical(16)	112	92	68	62	45	44	56	43	522
Agricultural	38	24	17	24	27	28	22	24	204
Biomedical(17)	68	65	66	67	62	61	57	51	497
Chemical	255	202	205	173	185	164	171	173	1528
Civil	174	174	157	118	120	122	139	137	1141
Ceramic	18	18	25	22	18	17	16	14	148
Computer(18)	69	78	93	53	48	37	46	32	456
Electrical	370	367	323	266	321	271	252	251	2421
Electronics	58	55	59	37	52	51	52	50	414
Industrial	72	40	48	40	56	44	62	49	389
Nuclear engineering(19).	69	93	77	78	69	71	75	66	598
Engineering mechanics ..	119	77	73	55	51	52	45	65	537
Engineering physics(19).	13	19	18	13	13	14	15	11	116
Mechanical	240	226	178	193	191	191	157	198	1574
Metallurgy/phys met(20).	87	68	64	67	52	71	46	41	496
Systems design(18)	58	56	47	38	56	39	39	24	355
Operations research(21).	60	66	52	57	45	50	49	32	411
Fuel technology(22)	10	8	9	6	6	15	6	15	75
Sanitary/environmental(23)	57	55	53	52	58	57	53	43	428
Mining(25)	5	2	1	6	2	1	6	6	29
Materials science(17) ..	96	79	83	88	80	87	73	76	662
Engineering, general ...	21	26	22	24	19	26	15	14	167
Engineering, other	65	59	60	47	41	41	39	46	398

See footnotes at end of table.

Table 3. New science and engineering doctorates awarded to U.S. citizens and non-U.S. citizens with permanent visas by subfield and race: 1975-82--con.

All races

Field of study	Year of doctorate 1975	1976	1977	1978	1979	1980	1981	1982	Total 1975-82
Mathematical sciences	923	803	769	756	778	751	713	654	6147
Algebra	106	97	76	74	78	68	42	48	589
Analysis/funct anyl(26).	144	116	119	98	89	74	75	66	781
Geometry	22	16	19	18	21	31	27	24	178
Logic	34	27	13	19	18	23	17	16	167
Number theory	21	23	28	17	16	22	21	25	173
Probability/math stat(27)	141	117	126	130	127	111	112	109	973
Topology	82	59	57	50	53	51	45	40	437
Computing theory	136	131	89	48	22	12	13	7	458
Computer science(13) ...	-	-	25	90	175	169	188	155	802
Operations research(29).	40	32	31	34	33	28	20	21	239
Applied mathematics	86	80	95	82	79	82	90	83	677
Mathematics, general ...	69	63	54	59	45	47	41	34	412
Mathematics, other	42	42	37	37	22	33	22	26	261
Life sciences	3733	3696	3585	3707	3835	4035	4050	4097	30738
Biological sciences	3100	3160	3071	3134	3262	3430	3421	3427	26005
Biochemistry	553	535	536	529	540	608	586	581	4468
Biophysics	89	103	114	98	114	94	85	74	771
Biometry, biostatistics.	32	39	42	38	41	36	40	49	317
Anatomy	109	127	102	132	145	137	148	145	1045
Cytology(30)	35	43	34	29	39	42	42	37	301
Embryology	25	11	19	15	14	18	19	9	130
Immunology(31)	66	79	90	86	131	119	141	136	848
Botany	138	163	145	127	125	129	128	126	1081
Ecology	131	136	152	162	168	159	185	162	1255
Hydrobiology(8)	8	13	14	3	10	-	-	-	48
Microbiology/bacteriol(32)	332	320	283	310	317	333	316	281	2492
Animal physiology(33) ..	311	266	287	284	296	323	311	275	2353
Plant physiology(33) ...	52	51	30	37	43	46	56	48	363
Zoology	250	243	236	219	233	212	181	186	1760
Genetics	127	108	126	109	122	132	140	157	1021
Entomology	135	118	119	120	124	127	115	131	989
Molecular biology(17) ..	140	138	118	158	124	165	176	197	1216
Nutrition/dietetics(11).	-	68	60	70	90	79	81	91	539
Parasitology(9)	15	18	15	10	16	17	14	10	115
Pathology	55	84	83	86	73	95	85	83	644
Pharmacology	153	186	183	198	196	239	259	255	1669
Neurosciences(35)	-	-	-	-	-	-	-	115	115
Biological sci, general.	157	159	154	162	152	173	175	164	1296
Biological sci, other ..	187	152	129	152	149	147	138	115	1169
Agricultural sciences	633	536	514	573	573	605	629	670	4733
Agronomy	80	77	71	85	78	86	113	103	693
Animal husbandry	17	14	17	17	21	20	15	20	141
Food sci/technology(17).	73	66	59	81	70	64	53	63	529
Fish/wildlife	58	50	61	53	62	59	62	57	462
Forestry	64	57	53	66	64	61	70	60	495
Horticulture	54	30	39	41	51	45	48	67	375
Soils/soil science(36) .	66	36	33	57	33	47	49	52	373
Animal sci/nutrition(37)	94	92	74	64	76	86	89	100	675
Phytopathology	71	57	57	60	63	79	71	88	546
Agriculture, general ...	1	5	0	3	1	2	1	2	15
Agriculture, other	55	52	50	46	54	56	58	58	429
Social sciences	2781	2705	2571	2448	2290	2290	2191	2041	19317
Anthropology	353	389	351	354	346	346	330	295	2764
Archeology	20	20	22	31	30	26	27	19	195
Hist/phil of science(38)	26	31	28	23	25	21	22	25	201
Linguistics	159	119	145	127	111	138	120	131	1050
Sociology	583	649	648	543	563	529	522	494	4531
Economics	674	646	592	569	564	539	576	491	4651
Econometrics	18	22	18	15	16	17	12	15	133
Agricultural economics(17)	103	100	87	93	79	103	103	103	771
Statistics(39)	23	22	17	29	12	24	21	21	169
Geography	164	133	129	128	109	105	85	75	928
Pol sci, public admin(40)	657	33	-	-	-	-	-	-	690
Political science(40) ..	1	541	534	536	435	442	373	372	3234
Psychology	2607	2768	2821	2858	2895	2909	3159	2914	22931
Clinical	790	872	920	974	993	1047	1222	1114	7932
Counseling/guidance	221	258	261	267	306	294	341	333	2281
Developmental/gerontol .	171	184	198	203	214	202	198	186	1556
Educational	127	121	128	140	151	131	174	133	1105
School	102	141	143	124	119	174	130	160	1093
Experimental(41)	337	342	321	290	282	296	272	226	2366
Comparative(41)	21	26	22	20	21	8	11	11	140
Physiological(41)	116	130	126	120	98	106	98	87	881
Industrial/personnel ...	59	64	78	71	85	64	85	80	586
Personality	62	57	62	40	40	42	48	36	387
Psychometrics	15	25	17	14	22	20	24	8	145
Social	214	191	195	196	207	184	170	165	1522
Psychology, general	206	193	206	250	165	165	208	192	1585
Psychology, other	166	164	144	149	192	176	178	183	1352
Total, non-sci/engineering(43)	13534	13912	13102	12578	12599	12396	12159	11708	101988
Total, all fields	28795	28763	27489	26634	26783	26508	26334	25533	216839

See footnotes at end of table.

Table 3. New science and engineering doctorates awarded to U.S. citizens and non-U.S. citizens with permanent visas by subfield and race: 1975-82--con.

American Indian

Field of study	Year of doctorate 1975	1976	1977	1978	1979	1980	1981	1982	Total 1975-82
Total, science/engineering	12	10	29	21	28	26	26	37	189
Physical sciences	0	0	6	4	1	3	1	3	18
Physics/astronomy	0	0	4	1	0	0	0	3	8
Astrophysics(1)	0	0	0	0	0	0	0	1	1
Atomic/molecular	0	0	1	0	0	0	0	0	1
Plasma(4)	0	0	0	1	0	0	0	0	1
Elementary particles	0	0	0	0	0	0	0	1	1
Solid state	0	0	0	0	0	0	0	1	1
Physics, general	0	0	2	0	0	0	0	0	2
Physics, other	0	0	1	0	0	0	0	0	1
Chemistry	0	0	2	3	1	3	1	0	10
Analytical	0	0	0	1	0	1	1	0	3
Organic	0	0	1	2	1	1	0	0	5
Chemistry, general	0	0	1	0	0	1	0	0	2
Earth, env & marine sciences	0	0	0	0	2	2	0	0	4
Mineralogy, petrology(10)	0	0	0	0	1	1	0	0	2
Geochemistry(10)	0	0	0	0	0	1	0	0	1
Earth science, general	0	0	0	0	1	0	0	0	1
Engineering	1	0	1	2	3	3	4	3	17
Aeronaut/astronautical(16)	1	0	0	1	0	0	0	0	2
Biomedical(17)	0	0	0	0	0	1	0	1	2
Chemical	0	0	0	1	0	0	0	0	1
Civil	0	0	1	0	1	0	1	0	3
Electrical	0	0	0	0	1	0	0	0	1
Nuclear engineering(19)	0	0	0	0	0	0	0	1	1
Mechanical	0	0	0	0	1	1	2	0	4
Metallurgy/phys met(20)	0	0	0	0	0	1	1	0	2
Engineering, general	0	0	0	0	0	0	0	1	1
Mathematical sciences	3	0	1	1	1	0	1	2	9
Algebra	1	0	0	0	0	0	0	0	1
Analysis/funct anyl(26)	1	0	0	0	0	0	0	0	1
Probability/math stat(27)	1	0	1	0	0	0	0	0	2
Computer science(13)	0	0	0	0	1	0	0	1	2
Applied mathematics	0	0	0	0	0	0	0	1	1
Mathematics, general	0	0	0	1	0	0	1	0	2
Life sciences	1	3	8	7	3	6	7	10	45
Biological sciences	1	2	7	5	3	5	6	7	36
Biochemistry	0	0	0	0	1	1	1	0	3
Biophysics	0	0	0	1	0	0	0	0	1
Anatomy	0	1	0	0	0	0	0	0	1
Embryology	0	0	1	0	0	1	0	0	2
Immunology(31)	0	0	0	0	0	0	0	1	1
Botany	0	0	0	0	0	0	1	1	2
Microbiology/bacteriol(32)	0	0	0	2	0	1	1	0	4
Animal physiology(33)	0	0	1	0	1	1	1	1	5
Zoology	0	0	1	1	0	0	0	1	3
Genetics	1	0	0	0	0	0	0	0	1
Entomology	0	0	0	0	1	0	1	1	3
Molecular biology(17)	0	0	2	0	0	0	0	0	2
Nutrition/dietetics(11)	0	0	0	0	0	1	1	0	2
Pathology	0	1	0	0	0	0	0	0	1
Pharmacology	0	0	2	0	0	0	0	2	4
Biological sci, general	0	0	0	1	0	0	0	0	1
Agricultural sciences	0	1	1	2	0	1	1	3	9
Agronomy	0	0	0	1	0	0	0	0	1
Animal husbandry	0	0	0	0	0	0	0	1	1
Food sci/technology(17)	0	0	0	1	0	1	0	0	2
Forestry	0	0	1	0	0	0	0	1	2
Soils/soil science(36)	0	0	0	0	0	0	0	1	1
Animal sci/nutrition(37)	0	1	0	0	0	0	1	0	2
Social sciences	2	3	4	4	8	6	4	3	34
Anthropology	0	0	0	0	2	0	1	0	3
Linguistics	0	0	0	2	1	0	0	0	3
Sociology	1	0	1	1	3	2	0	2	10
Economics	1	1	0	1	2	2	2	0	9
Agricultural economics(17)	0	0	1	0	0	0	1	0	2
Geography	0	1	0	0	0	1	0	0	2
Political science(40)	0	1	2	0	0	1	0	1	5
Psychology	5	4	9	3	10	6	9	16	62
Clinical	1	0	3	2	5	2	4	6	23
Counseling/guidance	0	0	2	0	1	1	0	4	8
Developmental/gerontol	0	0	0	0	0	0	0	1	1
Educational	0	1	1	1	0	1	1	0	5
School	0	0	0	0	1	0	0	0	1
Experimental(41)	1	2	1	0	0	0	1	0	5
Comparative(41)	1	0	0	0	0	0	0	0	1
Physiological(41)	1	0	0	0	0	0	0	0	1
Industrial/personnel	0	0	0	0	1	0	1	0	2
Social	0	0	0	0	1	0	0	2	3
Psychology, general	0	0	1	0	0	1	0	3	5
Psychology, other	1	1	1	0	1	1	2	0	7
Total, non-sci/engineering(43)	24	30	37	39	53	49	59	40	331
Total, all fields	36	40	66	60	81	75	85	77	520

See footnotes at end of table.

Table 3. New science and engineering doctorates awarded to U.S. citizens and non-U.S. citizens with permanent visas by subfield and race: 1975-82--con.

Asian American

Field of study	1975	1976	1977	1978	1979	1980	1981	1982	Total 1975-82
	Year of doctorate								
Total, science/engineering ...	807	787	738	826	865	856	814	749	6442
Physical sciences	171	181	160	179	168	164	149	130	1302
Physics/astronomy	74	52	63	58	63	46	56	43	455
Astronomy(1)	1	1	2	0	3	3	0	3	13
Astrophysics(1)	3	4	3	3	0	2	1	1	17
Atomic/molecular	5	6	5	4	4	3	3	7	37
Electromagnetism(2)	1	2	2	1	0	-	-	-	6
Acoustics	0	0	0	1	1	3	2	0	7
Fluids	0	2	1	2	1	0	1	1	8
Plasma(4)	5	4	7	2	5	1	4	4	32
Optics	2	2	2	2	1	4	4	0	17
Thermal(5)	0	0	2	0	0	0	1	-	3
Elementary particles ...	4	3	7	5	7	7	4	3	40
Nuclear structure	8	3	6	2	5	3	1	2	30
Solid state	31	14	13	18	20	11	16	10	133
Physics, general	8	8	8	12	12	5	15	6	74
Physics, other	6	3	5	6	4	4	4	6	38
Chemistry	97	129	97	121	105	118	93	87	847
Analytical	2	4	10	12	9	12	8	6	63
Inorganic	9	16	5	10	10	13	7	6	76
Organic	31	38	29	30	32	41	31	18	250
Nuclear chemistry	0	2	1	3	1	0	0	1	8
Physical	25	32	24	25	21	19	13	25	184
Theoretical chemistry ..	4	0	1	1	2	0	1	0	9
Agricultural/food(8)....	1	2	0	1	1	-	-	-	5
Pharmaceutical	8	10	7	13	7	10	3	7	65
Polymer(9)	5	9	4	12	4	13	15	6	68
Chemistry, general	8	12	9	10	13	6	6	7	71
Chemistry, other	4	4	7	4	5	4	9	11	48
Earth, env & marine sciences	19	21	21	25	21	22	14	26	169
Mineralogy, petrology(10)	0	1	2	0	0	1	0	0	4
Geochemistry(10)	1	2	3	1	1	1	1	2	12
Stratigraphy, sediment .	0	0	0	0	1	0	0	0	1
Paleontology	1	0	0	0	0	0	0	0	1
Geophysics	7	4	-	-	-	-	-	-	11
Geophysics, solid earth(11)	-	0	4	6	5	4	4	9	32
Geomorph/glacial geol ..	0	0	0	1	0	0	0	0	1
Hydrology/water res(12).	1	0	0	4	1	1	0	1	8
Oceanography	3	2	5	1	3	4	2	2	22
Marine sci, other(13) ..	-	-	0	0	0	2	0	2	4
Meteorology(14)	1	4	-	-	-	-	-	-	5
Atmospheric phys/chem(11)	-	1	0	3	0	2	0	0	6
Atmospheric dynamics(11)	-	1	1	2	4	1	2	1	12
Atmospheric sci, other(11)	-	3	2	4	1	2	3	3	18
Environ science, general	1	1	2	0	2	1	1	1	9
Environ science, other .	2	0	0	2	0	2	0	1	7
Applied geology(15)	0	1	0	0	1	0	0	0	2
Fuel technology(15)	1	0	0	0	0	-	-	-	1
Earth science, general .	1	1	1	1	1	1	1	3	10
Earth science, other ...	0	0	1	0	1	0	0	1	3
Engineering	274	279	249	272	306	278	285	246	2189
Aeronaut/astronautical(16)	9	6	6	15	10	7	6	7	66
Agricultural	2	2	1	3	2	0	4	2	16
Biomedical(17)	1	4	6	8	7	4	6	1	37
Chemical	51	37	37	42	41	35	42	37	322
Civil	28	40	25	19	20	21	26	25	204
Ceramic	1	5	2	2	0	4	3	3	20
Computer(18)	3	13	16	9	13	7	16	7	84
Electrical	41	50	57	42	71	45	51	47	404
Electronics	9	4	12	3	14	7	7	9	65
Industrial	3	1	5	2	9	6	6	8	40
Nuclear engineering(19).	4	10	11	8	10	13	15	7	78
Engineering mechanics ..	28	13	15	11	10	10	7	10	104
Engineering physics(19).	0	2	0	1	1	2	3	0	9
Mechanical	36	28	17	39	35	55	36	31	277
Metallurgy/phys met(20).	14	7	6	15	10	17	15	5	89
Systems design(18)	5	7	5	6	10	4	3	3	43
Operations research(21).	8	6	3	8	5	7	10	8	55
Fuel technology(22)	2	1	2	3	0	2	2	3	15
Sanitary/environmental(23)	7	5	3	6	7	5	2	5	40
Mining(25)	0	0	0	2	0	0	1	1	4
Materials science(17) ..	14	20	17	15	21	15	18	13	133
Engineering, general ...	1	7	0	3	3	3	3	3	23
Engineering, other	7	11	3	10	7	9	3	11	61

See footnotes at end of table.

Table 3. New science and engineering doctorates awarded to U.S. citizens and non-U.S. citizens with permanent visas by subfield and race: 1975-82--con.

Asian American

Field of study	1975	1976	1977	1978	1979	1980	1981	1982	Total 1975-82
	Year of doctorate								
Mathematical sciences	62	49	42	47	55	51	56	44	406
Algebra	6	3	3	0	3	1	2	1	19
Analysis/funct anyl(26).	11	4	6	8	7	2	4	5	47
Geometry	1	1	1	0	0	3	2	2	10
Logic	0	0	0	2	0	1	0	1	4
Number theory	2	1	0	1	1	1	1	1	8
Probability/math stat(27)	12	9	12	14	14	17	10	10	98
Topology	3	3	1	2	3	3	1	0	16
Computing theory	12	8	3	0	0	1	2	0	26
Computer science(13) ...	0	0	0	4	9	9	16	12	50
Operations research(29).	1	4	4	1	5	4	1	1	21
Applied mathematics	6	6	7	3	5	6	11	7	51
Mathematics, general ...	7	5	3	6	8	3	4	1	37
Mathematics, other	1	5	2	6	0	0	2	3	19
Life sciences	187	167	161	188	188	198	181	182	1452
Biological sciences	141	147	140	151	165	170	156	159	1229
Biochemistry	38	44	36	44	42	35	37	34	308
Biophysics	6	6	9	11	9	9	3	4	57
Biometry, biostatistics.	0	5	3	4	5	5	2	2	26
Anatomy	6	2	2	1	7	3	3	9	33
Cytology(30)	1	1	1	0	4	4	0	3	14
Embryolcgy	0	2	0	1	1	1	1	1	7
Immunology(31)	5	2	7	5	6	12	11	7	55
Botany	1	5	1	5	4	5	3	3	27
Ecology	2	2	1	4	5	1	6	0	19
Hydrobiology(8)	0	0	0	0	1	-	-	-	1
Microbiology/bacteriol(32)	17	16	11	13	20	23	16	18	134
Animal physiology(33) ..	8	6	9	8	14	9	10	9	73
Plant physiology(33) ...	4	4	0	2	2	3	2	3	20
Zoology	2	2	3	2	3	1	3	5	21
Genetics	7	6	5	3	9	9	5	6	50
Entomology	0	2	5	8	6	5	9	7	42
Molecular biology(17) ..	7	6	9	8	5	8	5	9	57
Nutrition/dietetics(11).	-	9	10	8	7	6	4	4	48
Parasitology(9)	1	0	1	0	1	1	0	0	4
Pathology	3	2	5	1	1	3	6	2	21
Pharmacology	11	13	12	10	5	15	16	15	97
Neurosciences(35)	-	-	-	-	-	-	-	5	5
Biological sci, general.	6	6	4	7	4	6	14	8	55
Biological sci, other ..	16	6	8	6	4	6	4	5	55
Agricultural sciences	46	20	21	37	23	28	25	23	223
Agronomy	5	1	3	3	2	2	3	5	24
Animal husbandry	0	0	0	0	1	1	1	0	3
Food sci/technology(17).	16	8	4	18	5	10	6	5	72
Fish/wildlife	5	1	3	2	1	0	0	0	12
Forestry	1	1	2	5	2	0	3	1	15
Horticulture	4	0	3	2	3	2	3	4	21
Soils/soil science(36) .	4	1	0	1	2	6	2	2	18
Animal sci/nutrition(37)	7	3	1	3	3	3	4	3	27
Phytopathology	3	3	2	0	3	0	2	0	13
Agriculture, general ...	0	1	0	0	0	0	0	1	2
Agriculture, other	1	1	3	3	1	4	1	2	16
Social sciences	73	68	72	87	91	93	88	90	662
Anthropology	4	5	6	5	7	9	4	4	44
Archeology	0	0	0	0	2	0	0	0	2
Hist/phil of science(38)	0	2	0	0	0	0	0	0	2
Linguistics	6	5	8	4	9	6	5	8	51
Sociology	13	12	15	16	21	14	18	19	128
Economics	16	24	20	32	29	38	32	36	227
Econometrics	2	3	2	2	0	2	3	2	16
Agricultural economics(17)	6	4	1	5	7	2	4	3	32
Statistics(39)	1	1	1	9	2	6	3	5	28
Geography	5	1	1	3	6	5	4	3	28
Pol sci, public admin(40)	20	2	-	-	-	-	-	-	22
Political science(40) ..	0	9	18	11	8	11	15	10	82
Psychology	21	22	33	28	36	50	41	31	262
Clinical	5	7	6	2	11	18	13	11	73
Counseling/guidance	0	0	3	2	1	4	6	0	16
Developmental/gerontol .	2	3	4	3	2	3	2	4	23
Educational	1	0	1	4	2	4	2	3	17
School	1	0	2	0	1	0	1	0	5
Experimental(41)	2	3	2	2	7	5	4	4	29
Comparative(41)	0	0	0	1	0	0	0	0	1
Physiological(41)	1	2	2	3	2	3	3	3	19
Industrial/personnel ...	2	0	1	1	0	0	1	0	5
Personality	1	0	0	2	0	2	1	2	8
Psychometrics	0	0	2	1	1	2	0	0	6
Social	5	5	4	2	2	4	1	1	24
Psychology, general	1	2	4	2	3	3	3	3	21
Psychology, other	0	0	2	3	4	2	4	0	15
Total, non-sci/engineering(43)	218	188	172	206	237	246	258	251	1776
Total, all fields	1025	975	910	1032	1102	1102	1072	1000	8218

See footnotes at end of table.

Table 3. New science and engineering doctorates awarded to U.S. citizens and non-U.S. citizens with permanent visas by subfield and race: 1975-82--con.

Black

Field of study	Year of doctorate 1975	1976	1977	1978	1979	1980	1981	1982	Total 1975-82
Total, science/engineering	270	277	303	309	309	305	316	311	2400
Physical sciences	34	25	32	37	37	16	24	26	231
Physics/astronomy	11	5	10	8	8	4	6	11	63
Astronomy(1)	0	0	0	0	0	0	0	1	1
Astrophysics(1)	1	0	0	0	1	1	1	0	4
Atomic/molecular	0	0	3	0	1	0	1	1	6
Plasma(4)	0	0	0	0	0	2	1	0	3
Optics	1	0	0	0	1	0	0	0	2
Elementary particles	2	2	3	3	0	0	1	3	14
Nuclear structure	1	0	1	1	2	0	0	1	6
Solid state	3	2	3	1	1	0	0	4	14
Physics, general	0	0	0	2	0	0	2	1	5
Physics, other	3	1	0	1	2	1	0	0	8
Chemistry	23	20	22	29	29	12	18	15	168
Analytical	4	3	4	5	2	0	1	1	20
Inorganic	4	3	2	5	5	2	5	2	28
Organic	13	2	5	4	9	3	3	4	43
Nuclear chemistry	0	2	0	0	0	0	0	0	2
Physical	1	6	7	7	9	2	2	4	38
Theoretical chemistry	1	1	1	0	1	0	0	0	4
Agricultural/food(8)	0	1	0	0	0	-	-	-	1
Pharmaceutical	0	0	0	1	0	0	1	0	2
Polymer(9)	0	0	2	2	1	0	0	1	6
Chemistry, general	0	2	1	4	2	3	6	3	21
Chemistry, other	0	0	0	1	0	2	0	0	3
Earth, env & marine sciences	1	0	2	4	3	1	4	3	18
Mineralogy, petrology(10)	0	0	0	0	1	0	0	0	1
Geophysics, solid earth(11)	0	0	0	0	0	0	1	1	2
Geomorph/glacial geol.	-	0	0	1	0	0	0	0	1
Hydrology/water res(12).	0	0	1	1	0	0	0	1	3
Oceanography	0	0	1	0	0	0	0	0	1
Atmospheric phys/chem(11)	-	0	0	0	1	0	1	1	3
Atmospheric sci, other(11)	-	0	0	0	1	0	0	0	1
Environ science, general	-	0	0	0	0	0	1	0	1
Environ science, other	1	0	0	2	0	0	1	0	4
Earth science, general	0	0	0	0	0	1	0	0	1
Engineering	16	21	15	13	20	18	19	20	142
Aeronaut/astronautical(16)	0	1	0	0	1	1	0	3	6
Agricultural	0	0	0	0	2	1	0	0	3
Biomedical(17)	0	0	0	1	1	1	1	0	4
Chemical	0	2	1	1	1	1	2	1	9
Civil	1	3	0	3	2	1	3	0	13
Computer(13)	0	0	1	1	0	2	0	0	4
Electrical	5	8	5	2	6	6	6	4	42
Electronics	2	1	1	0	3	0	1	0	8
Industrial	1	0	1	3	0	0	0	1	6
Nuclear engineering(19).	0	1	1	0	0	0	1	2	5
Engineering mechanics	0	0	0	0	0	0	1	1	2
Engineering physics(19).	1	0	1	0	0	0	0	0	2
Mechanical	5	1	1	0	1	2	1	2	13
Metallurgy/phys met(20).	1	0	0	0	0	0	0	0	1
Systems design(18)	0	1	1	0	1	0	1	0	4
Operations research(21).	0	1	0	0	1	1	0	1	4
Fuel technology(22)	0	0	1	0	0	1	1	1	4
Sanitary/environmental(23)	0	1	1	1	0	0	1	2	6
Materials science(17)	0	1	0	0	0	1	0	1	3
Engineering, general	0	0	0	1	1	0	0	0	2
Engineering, other	0	0	0	0	0	0	0	1	1

See footnotes at end of table.

Table 3. New science and engineering doctorates awarded to U.S. citizens and non-U.S. citizens with permanent visas by subfield and race: 1975-82--con.

Black

Field of study	Year of doctorate								
	1975	1976	1977	1978	1979	1980	1981	1982	Total 1975-82
Mathematical sciences	11	5	10	13	12	12	11	7	81
Algebra	2	2	0	2	2	2	0	1	11
Analysis/funct anyl(26).	1	1	3	2	3	3	3	0	16
Geometry	0	0	1	0	0	0	0	1	2
Logic	0	0	0	0	0	0	0	1	1
Number theory	0	0	0	0	1	0	0	0	1
Probability/math stat(27)	2	0	1	2	1	2	3	2	13
Topology	1	1	1	1	1	0	0	0	5
Computing theory	0	0	0	1	0	0	0	0	1
Computer science(13)	0	0	0	0	1	0	2	1	4
Operations research(29).	1	0	0	1	1	0	2	1	6
Applied mathematics	2	0	3	3	1	1	0	0	10
Mathematics, general	2	0	1	0	1	2	1	0	7
Mathematics, other	0	1	0	1	0	2	0	0	4
Life sciences	54	61	51	66	44	58	61	55	450
Biological sciences	49	53	36	55	35	51	50	48	377
Biochemistry	7	4	6	9	5	7	9	5	52
Biophysics	2	0	1	0	0	2	0	1	6
Biometry, biostatistics.	0	0	0	0	2	0	0	2	4
Anatomy	1	0	0	2	2	3	1	0	9
Cytology(30)	0	2	0	0	1	0	1	1	5
Embryology	0	0	0	0	2	0	3	0	5
Immunology(31)	1	4	0	1	2	2	2	2	14
Botany	2	1	3	5	2	1	1	0	15
Ecology	1	2	2	0	0	2	0	0	7
Microbiology/bacteriol(32)	8	3	6	12	5	6	7	5	52
Animal physiology(33) ..	7	6	0	4	5	1	2	4	29
Plant physiology(33) ...	0	0	1	0	0	2	0	0	3
Zoology	3	6	3	5	0	3	3	5	28
Genetics	3	6	0	1	0	0	0	1	11
Entomology	2	2	1	1	0	2	0	0	8
Molecular biology(17) ..	2	4	1	2	1	5	3	5	23
Nutrition/dietetics(11).	0	2	4	2	5	3	7	7	30
Parasitology(9)	0	1	0	0	2	0	0	1	4
Pathology	2	1	0	2	0	2	0	3	10
Pharmacology	1	4	1	6	1	4	3	2	22
Neurosciences(35)	-	-	-	-	-	-	-	1	1
Biological sci, general.	3	2	5	2	0	5	5	2	24
Biological sci, other ..	4	3	2	1	0	1	3	1	15
Agricultural sciences	5	8	15	11	9	7	11	7	73
Agronomy	1	3	1	1	2	2	0	2	12
Food sci/technology(17).	0	1	3	1	3	0	1	1	10
Fish/wildlife	0	0	0	1	0	0	0	0	1
Forestry	0	0	1	0	0	0	2	0	3
Horticulture	0	2	0	0	2	1	1	0	6
Soils/soil science(36) .	2	1	4	1	0	0	3	0	11
Animal sci/nutrition(37)	2	1	2	4	0	0	2	3	14
Phytopathology	0	0	2	0	1	2	1	0	6
Agriculture, other	0	0	2	3	1	2	1	1	10
Social sciences	76	79	98	76	78	81	84	85	657
Anthropology	6	13	1	5	8	10	7	7	57
Linguistics	4	2	6	3	3	9	2	3	32
Sociology	26	33	33	29	30	24	25	29	229
Economics	10	10	19	6	9	13	16	18	101
Econometrics	0	0	1	0	0	0	0	0	1
Agricultural economics(17)	0	2	2	4	2	4	7	2	23
Geography	6	3	3	2	2	5	2	2	25
Pol sci, public admin(40)	24	1	-	-	-	-	-	-	25
Political science(40) ..	0	15	33	27	24	16	25	24	164
Psychology	78	86	95	100	115	119	113	115	821
Clinical	22	29	40	42	40	43	55	44	315
Counseling/guidance	8	10	7	9	14	9	17	17	91
Developmental/gerontol .	1	5	1	4	6	12	2	10	41
Educational	3	5	2	6	8	7	2	3	36
School	4	5	3	4	4	5	2	3	30
Experimental(41)	6	3	5	5	3	2	3	4	31
Comparative(41)	0	0	1	0	1	0	0	0	2
Physiological(41)	2	2	1	4	0	5	1	1	16
Industrial/personnel ...	0	1	1	1	0	4	4	2	13
Personality	2	4	4	1	3	0	3	1	18
Psychometrics	0	1	0	0	1	0	0	0	2
Social	12	8	8	9	14	13	9	10	83
Psychology, general	11	7	6	6	12	10	9	14	75
Psychology, other	7	6	16	9	9	9	6	6	68
Total, non-sci/engineering(43)	787	872	891	797	804	801	793	822	6567
Total, all fields	1057	1149	1194	1106	1113	1106	1109	1133	8967

See footnotes at end of table.

Table 3. New science and engineering doctorates awarded to U.S. citizens and non-U.S. citizens with permanent visas by subfield and race: 1975-82--con.

Hispanic

Field of study	Year of doctorate 1975	1976	1977	1978	1979	1980	1981	1982	Total 1975-82
Total, science/engineering	143	126	186	199	220	207	230	260	1571
Physical sciences	19	17	33	20	33	27	30	26	205
Physics/astronomy	9	6	13	6	15	12	8	9	78
Astronomy(1)	0	0	0	0	1	2	0	0	3
Astrophysics(1)	0	0	0	1	1	1	2	0	5
Atomic/molecular	1	1	1	1	1	0	1	3	9
Acoustics	0	0	1	0	0	0	0	0	1
Fluids	0	0	0	0	1	0	0	1	2
Plasma(4)	1	0	0	0	0	1	0	1	3
Optics	0	1	1	0	0	0	0	0	2
Elementary particles	0	0	2	2	3	2	2	0	11
Nuclear structure	2	1	1	0	0	1	0	0	5
Solid state	1	2	2	2	3	3	3	4	20
Physics, general	2	1	3	0	2	1	0	0	9
Physics, other	2	0	2	0	3	1	0	0	8
Chemistry	10	11	20	14	18	15	22	17	127
Analytical	0	2	1	3	3	4	1	1	15
Inorganic	3	1	2	1	1	1	4	2	15
Organic	3	3	5	5	6	7	7	6	42
Nuclear chemistry	0	0	0	0	0	0	1	0	1
Physical	4	4	6	1	7	2	4	3	31
Theoretical chemistry	0	0	0	1	1	0	1	0	3
Pharmaceutical	0	1	1	0	0	0	2	0	4
Polymer(9)	0	0	1	1	0	0	0	1	3
Chemistry, general	0	0	4	2	0	0	2	3	11
Chemistry, other	0	0	0	0	0	1	0	1	2
Earth, env & marine sciences	4	0	12	5	6	4	6	7	44
Mineralogy, petrology(10)	0	0	1	0	0	0	0	0	1
Geochemistry(10)	1	0	0	0	1	0	1	1	4
Stratigraphy, sediment	0	0	0	0	0	0	1	1	2
Paleontology	0	0	0	0	0	0	0	1	1
Structural geology	0	0	1	0	0	0	0	0	1
Geophysics, solid earth(11)	-	0	2	1	0	1	1	1	6
Hydrology/water res(12).	0	0	0	0	1	0	0	0	1
Oceanography	2	0	1	0	1	0	1	0	5
Marine sci, other(13)	-	0	0	1	0	1	0	0	2
Atmospheric phys/chem(11)	-	0	0	0	2	0	1	0	3
Atmospheric sci, other(11)	-	0	3	0	0	1	0	0	4
Environ science, general	0	0	1	0	1	0	0	0	2
Environ science, other	0	0	0	1	0	0	0	1	2
Applied geology(15)	1	0	1	0	0	0	0	1	3
Earth science, general	0	0	1	2	0	1	1	0	5
Earth science, other	0	0	1	0	0	0	0	1	2
Engineering	17	16	22	32	24	27	16	35	189
Aeronaut/astronautical(16)	0	0	2	1	1	1	0	1	6
Agricultural	0	0	0	0	1	1	0	0	2
Biomedical(17)	0	0	1	2	2	1	0	0	6
Chemical	4	3	5	2	3	4	1	5	27
Civil	0	0	2	6	2	7	4	3	24
Ceramic	0	0	0	0	2	0	0	0	2
Computer(18)	0	0	1	3	0	0	0	0	4
Electrical	2	3	4	7	3	4	0	6	29
Electronics	0	1	0	1	2	2	2	1	9
Industrial	0	0	2	0	0	1	1	3	7
Nuclear engineering(19).	1	0	0	1	2	0	0	2	6
Engineering mechanics	1	2	0	0	0	1	0	1	5
Engineering physics(19).	0	0	1	0	0	0	0	0	1
Mechanical	1	1	2	3	2	0	3	4	16
Metallurgy/phys met(20).	1	0	0	2	0	1	1	1	6
Systems design(18)	1	2	1	0	0	0	1	1	6
Operations research(21).	2	0	0	1	2	2	0	1	8
Fuel technology(22)	0	0	0	0	0	1	0	1	2
Sanitary/environmental(23)	2	3	0	2	1	0	3	0	11
Materials science(17)	2	0	0	0	1	0	0	2	5
Engineering, general	0	0	0	1	0	0	0	0	1
Engineering, other	0	1	1	0	0	1	0	3	6

See footnotes at end of table.

Table 3. New science and engineering doctorates awarded to U.S. citizens and non-U.S. citizens with permanent visas by subfield and race: 1975-82--con.

Hispanic

Field of study	Year of doctorate 1975	1976	1977	1978	1979	1980	1981	1982	Total 1975-82
Mathematical sciences	8	9	10	5	12	6	5	7	62
Algebra	0	1	2	0	2	1	0	3	9
Analysis/funct anyl(26)	2	3	2	0	1	0	0	0	8
Geometry	0	0	0	0	0	0	1	1	2
Number theory	0	1	0	0	0	0	0	0	1
Probability/math stat(27)	0	1	2	1	4	1	1	0	10
Topology	1	0	1	1	0	0	0	0	3
Computing theory	1	1	1	0	0	0	0	0	3
Computer science(13)	0	0	0	0	2	1	0	1	4
Operations research(29)	0	0	0	1	0	0	0	0	1
Applied mathematics	3	1	2	0	2	2	1	1	12
Mathematics, general	0	1	0	0	1	1	1	1	5
Mathematics, other	1	0	0	2	0	0	1	0	4
Life sciences	36	29	29	39	44	36	56	53	322
Biological sciences	32	25	25	30	38	31	41	46	268
Biochemistry	7	6	5	8	7	5	6	5	49
Biophysics	0	0	1	0	2	0	1	1	5
Biometry, biostatistics	0	1	1	0	0	0	0	0	2
Anatomy	0	0	2	0	4	0	2	1	9
Cytology(30)	2	0	1	0	1	1	1	0	6
Embryology	0	0	0	0	1	1	0	0	2
Immunology(31)	0	0	0	3	2	1	2	4	12
Botany	1	4	3	1	2	2	1	3	17
Ecology	1	1	0	0	3	3	3	1	12
Microbiology/bacteriol(32)	5	4	2	4	1	4	6	4	30
Animal physiology(33)	3	2	4	4	2	3	4	4	26
Plant physiology(33)	0	0	0	2	1	0	1	0	4
Zoology	1	2	0	1	1	1	2	5	13
Genetics	2	0	3	0	0	1	2	2	10
Entomology	3	1	2	1	2	3	3	3	18
Molecular biology(17)	2	0	0	2	2	2	3	5	16
Nutrition/dietetics(11)	-	1	0	3	0	1	0	2	7
Parasitology(9)	1	0	0	1	1	0	1	0	4
Pathology	1	0	1	0	1	0	0	0	3
Pharmacology	2	0	0	0	1	2	1	2	8
Neurosciences(35)	-	-	-	-	-	-	-	1	1
Biological sci, general	0	3	0	0	2	1	1	2	9
Biological sci, other	1	0	0	0	2	0	1	1	5
Agricultural sciences	4	4	4	9	6	5	15	7	54
Agronomy	1	0	1	0	1	0	3	1	7
Food sci/technology(17)	1	1	0	2	1	1	3	2	11
Fish/wildlife	0	0	0	1	1	0	1	0	3
Forestry	0	0	0	1	1	0	1	1	4
Horticulture	0	1	1	1	0	0	2	1	6
Soils/soil science(36)	0	1	1	0	0	1	2	0	5
Animal sci/nutrition(37)	1	0	1	0	1	1	2	0	6
Phytopathology	0	1	0	2	1	1	1	1	7
Agriculture, general	0	0	0	1	0	0	0	0	1
Agriculture, other	1	0	0	1	0	1	0	1	4
Social sciences	27	28	40	47	52	53	51	58	356
Anthropology	3	9	6	8	6	3	9	6	50
Archeology	0	0	0	2	0	0	0	1	3
Linguistics	0	0	7	3	6	6	3	5	30
Sociology	8	6	14	13	15	16	15	18	105
Economics	4	2	3	7	10	13	12	12	63
Econometrics	0	0	0	0	0	1	0	2	3
Agricultural economics(17)	2	2	2	3	1	2	2	3	17
Statistics(39)	1	1	0	0	0	1	0	0	3
Geography	0	0	3	2	1	1	2	1	10
Pol sci, public admin(40)	9	0	-	-	-	-	-	-	9
Political science(40)	0	8	5	9	13	10	8	10	63
Psychology	32	27	40	51	49	54	66	74	393
Clinical	9	8	19	19	24	25	30	31	165
Counseling/guidance	5	4	4	3	4	8	7	9	44
Developmental/gerontol	1	2	1	1	3	3	1	5	17
Educational	4	1	3	3	1	2	5	5	24
School	0	0	2	2	0	0	3	3	10
Experimental(41)	2	1	1	3	0	5	3	4	19
Comparative(41)	0	1	0	0	1	0	1	1	4
Physiological(41)	2	5	2	4	1	1	1	2	18
Industrial/personnel	1	0	3	0	2	1	1	0	8
Personality	1	0	0	2	2	1	0	0	6
Psychometrics	0	1	0	1	0	0	0	0	2
Social	0	2	0	4	4	0	4	5	19
Psychology, general	3	1	2	4	3	5	6	6	30
Psychology, other	4	1	3	5	4	3	4	3	27
Total, non-sci/engineering(43)	194	237	288	339	319	278	296	352	2303
Total, all fields	337	363	474	538	539	485	526	612	3874

See footnotes at end of table.

Table 3. New science and engineering doctorates awarded to U.S. citizens and non-U.S. citizens with permanent visas by subfield and race: 1975-82--con.

White

Field of study	Year of doctorate								
	1975	1976	1977	1978	1979	1980	1981	1982	Total 1975-82
Total, science/engineering ...	13210	12926	12465	11813	11882	11938	12167	12065	98466
Physical sciences	2180	2032	1883	1730	1787	1661	1757	1849	14899
Physics/astronomy	873	843	747	710	694	622	635	644	5768
Astronomy(1)	50	63	52	55	43	40	39	43	385
Astrophysics(1)	51	56	42	56	42	51	50	38	386
Atomic/molecular	103	84	75	65	55	45	45	62	534
Electromagnetism(2)	9	7	6	8	4	-	-	-	34
Mechanics(3)	2	3	-	-	-	-	-	-	5
Acoustics	10	9	6	11	10	18	9	7	80
Fluids	16	16	11	8	11	8	8	7	85
Plasma(4)	35	58	51	50	39	45	46	47	371
Optics	20	39	23	24	33	29	34	33	235
Thermal(5)	8	2	3	7	5	5	3	-	33
Elementary particles ...	95	90	93	86	78	75	80	73	670
Nuclear structure	87	69	64	50	69	49	39	36	463
Solid state	215	191	165	162	152	128	163	161	1337
Physics, general	82	72	75	64	81	60	53	64	551
Physics, other	90	84	81	64	72	69	66	73	599
Chemistry	1307	1189	1136	1040	1093	1039	1122	1205	9131
Analytical	117	124	145	134	166	141	189	162	1178
Inorganic	191	187	158	150	155	146	144	176	1307
Organic	455	379	375	330	332	331	377	385	2964
Nuclear chemistry	18	18	19	9	8	12	9	14	107
Physical	302	258	243	212	238	208	206	252	1919
Theoretical chemistry ..	34	41	27	35	38	38	25	24	262
Agricultural/food(8) ...	4	7	5	3	6	-	-	-	25
Pharmaceutical	46	34	32	29	27	24	36	35	263
Polymer(9)	28	24	34	28	37	26	25	25	227
Chemistry, general	66	69	55	59	53	63	60	76	501
Chemistry, other	46	48	43	51	33	50	51	56	378
Earth, env & marine sciences	477	491	518	466	502	485	448	510	3897
Mineralogy, petrology(10)	30	43	50	30	28	42	26	37	286
Geochemistry(10)	34	38	46	43	46	42	44	40	333
Stratigraphy, sediment .	40	47	31	26	28	36	36	43	287
Paleontology	37	37	26	29	33	20	18	22	222
Structural geology	15	20	16	25	23	18	27	24	168
Geophysics	57	18	-	-	-	-	-	-	75
Geophysics, solid earth(11)	-	27	50	38	59	46	50	53	323
Geomorph/glacial geol...	27	27	21	20	14	12	12	19	152
Hydrology/water res(12).	16	11	13	15	11	20	12	13	111
Oceanography	69	70	88	77	72	72	56	77	581
Marine sci, other(13) ..	-	-	8	26	28	21	27	33	143
Meteorology(14)	29	14	-	-	-	-	-	-	43
Atmospheric phys/chem(11)	-	12	16	17	12	15	12	15	97
Atmospheric dynamics(11)	-	9	25	15	15	13	21	16	114
Atmospheric sci, other(11)	-	13	28	25	27	33	18	19	163
Environ science, general	53	28	17	14	18	12	25	17	184
Environ science, other .	10	24	25	19	26	20	17	25	166
Applied geology(15)	13	15	15	12	15	21	16	16	123
Fuel technology(15)	2	2	1	0	2	-	-	-	7
Earth science, general .	24	19	29	23	27	26	20	23	191
Earth science, other ...	21	17	15	12	18	16	11	18	128
Engineering	1649	1522	1428	1169	1155	1143	1093	1099	10258
Aeronaut/astronautical(16)	94	81	59	44	29	33	46	32	418
Agricultural	34	22	16	21	20	23	17	22	175
Biomedical(17)	62	60	55	51	50	47	46	46	417
Chemical	178	143	150	120	131	116	122	123	1083
Civil	125	121	120	87	90	88	100	106	837
Ceramic	15	12	23	20	14	12	13	11	120
Computer(18)	61	57	73	38	32	28	30	22	341
Electrical	293	287	237	191	215	197	182	180	1782
Electronics	43	46	44	26	30	37	41	38	305
Industrial	66	37	37	32	41	35	33	37	318
Nuclear engineering(19).	59	81	63	64	56	55	55	52	483
Engineering mechanics ..	78	59	56	40	34	39	34	53	393
Engineering physics(19).	11	17	15	12	12	11	12	11	101
Mechanical	177	179	154	143	139	128	111	149	1180
Metallurgy/phys met(20).	61	51	53	40	40	48	29	32	354
Systems design(18)	48	43	40	32	41	34	32	20	290
Operations research(21).	42	57	48	43	36	38	38	22	324
Fuel technology(22)	7	7	5	3	5	10	3	7	47
Sanitary/environmental(23)	46	44	47	40	45	51	46	36	355
Mining(25)	4	2	1	4	2	1	5	4	23
Materials science(17) ..	74	56	61	69	53	66	51	58	486
Engineering, general ...	17	17	21	14	15	18	12	8	122
Engineering, other	54	45	50	35	27	28	35	30	304

See footnotes at end of table.

Table 3. New science and engineering doctorates awarded to U.S. citizens and non-U.S. citizens with permanent visas by subfield and race: 1975-82--con.

White

Field of study	Year of doctorate 1975	1976	1977	1978	1979	1980	1981	1982	Total 1975-82
Mathematical sciences	796	698	671	640	638	639	610	572	5284
Algebra	97	89	70	70	68	61	39	42	536
Analysis/funct anyl(26).	124	107	105	82	71	66	67	58	680
Geometry	20	13	16	14	20	28	23	20	154
Logic	32	26	12	16	17	19	17	14	153
Number theory	18	21	28	16	13	20	19	22	157
Probability/math stat(27)	123	102	108	109	104	88	95	95	824
Topology	72	52	51	41	47	47	40	38	388
Computing theory	120	117	80	42	22	11	11	7	410
Computer science(13) ...	-	-	22	77	153	143	162	136	693
Operations research(29).	36	25	26	31	25	22	17	18	200
Applied mathematics	69	70	79	73	68	67	73	70	569
Mathematics, general ...	46	42	40	41	29	37	29	30	294
Mathematics, other	39	34	34	28	21	30	18	22	226
Life sciences	3311	3276	3198	3188	3333	3511	3566	3670	27053
Biological sciences	2750	2789	2740	2702	2830	2972	3015	3054	22852
Biochemistry	477	462	471	442	458	517	510	520	3857
Biophysics	75	92	95	78	91	73	78	64	646
Biometry, biostatistics.	31	32	37	31	32	31	36	45	275
Anatomy	99	117	94	124	124	125	139	130	952
Cytology(30)	31	35	31	28	28	33	38	33	257
Embryology	23	9	18	14	8	14	15	8	109
Immunology(31)	57	69	81	74	113	95	123	118	730
Botany	130	148	133	112	110	116	116	116	981
Ecology	126	125	143	157	148	145	170	155	1169
Hydrobiology(8)	7	13	14	3	8	-	-	-	45
Microbiology/bacteriol(32)	290	283	251	256	270	283	270	241	2144
Animal physiology(33) ..	281	246	263	249	264	281	283	251	2118
Plant physiology(33) ...	47	45	27	30	39	39	49	45	321
Zoology	233	223	219	203	210	199	168	166	1621
Genetics	112	92	114	98	110	118	128	144	916
Entomology	123	109	105	109	112	111	97	114	880
Molecular biology(17) ..	127	124	101	133	107	138	155	176	1061
Nutrition/dietetics(11).	-	54	43	50	74	66	61	77	425
Parasitology(9)	13	17	14	9	11	16	12	9	101
Pathology	47	73	71	78	67	84	77	78	575
Pharmacology	135	159	164	163	175	204	227	220	1447
Neurosciences(35)	0	0	0	0	0	0	0	105	105
Biological sci, general.	134	125	134	126	135	153	139	138	1084
Biological sci, other ..	152	137	117	135	136	131	124	101	1033
Agricultural sciences	561	487	458	486	503	539	551	616	4201
Agronomy	72	70	62	75	66	77	105	91	618
Animal husbandry	17	14	16	17	20	18	13	19	134
Food sci/technology(17).	52	54	50	55	59	49	39	55	413
Fish/wildlife	51	46	57	48	57	58	58	56	431
Forestry	62	56	47	53	58	60	63	55	454
Horticulture	50	26	33	36	44	41	40	61	331
Soils/soil science(36) .	58	33	27	54	27	37	39	49	324
Animal sci/nutrition(37)	79	83	68	54	64	76	77	90	591
Phytopathology	67	52	53	54	57	73	65	86	507
Agriculture, general ...	1	4	0	1	1	2	1	1	11
Agriculture, other	52	49	45	39	50	48	51	53	387
Social sciences	2435	2366	2226	2076	1897	1937	1843	1736	16516
Anthropology	313	338	316	309	289	301	284	268	2418
Archeology	20	19	21	28	27	24	26	18	183
Hist/phil of science(38)	24	24	27	23	19	19	19	24	179
Linguistics	133	105	118	102	87	110	105	109	869
Sociology	504	566	556	454	465	453	446	414	3858
Economics	602	567	522	485	464	443	477	409	3969
Econometrics	16	16	12	12	15	13	9	11	104
Agricultural economics(17)	91	85	79	79	63	88	84	91	660
Statistics(39)	20	18	15	19	9	17	17	16	131
Geography	148	124	112	112	95	87	71	65	814
Pol sci, public admin(40)	563	25	-	-	-	-	-	-	588
Political science(40) ..	1	479	448	453	364	382	305	311	2743
Psychology	2362	2541	2541	2526	2550	2562	2850	2629	20559
Clinical	741	810	837	882	870	928	1091	1010	7169
Counseling/guidance	202	263	235	240	274	262	308	300	2064
Developmental/gerontol .	164	173	186	187	194	175	188	166	1433
Educational	114	109	120	119	132	111	159	117	981
School	93	134	134	112	112	167	120	153	1025
Experimental(41)	318	321	299	270	258	272	258	213	2209
Comparative(41)	18	24	21	19	17	7	10	10	126
Physiological(41)	109	116	116	104	95	94	92	81	807
Industrial/personnel ...	54	62	72	68	80	56	75	78	545
Personality	53	52	56	31	31	35	43	30	331
Psychometrics	13	22	15	11	19	18	24	8	130
Social	190	168	177	170	182	165	153	145	1350
Psychology, general	147	153	156	188	122	120	168	149	1203
Psychology, other	146	154	117	123	164	132	161	169	1186
Total, non-sci/engineering(43)	11751	12017	11191	10528	10514	10517	10296	9997	86811
Total, all fields	24961	24943	23656	22341	22396	22455	22463	22062	185277

See footnotes at end of table.

Table 3. New science and engineering doctorates awarded to U.S. citizens and non-U.S. citizens with permanent visas by subfield and race: 1975-82--con.

Other and Unknown

Field of study	Year of doctorate								
	1975	1976	1977	1978	1979	1980	1981	1982	Total 1975-82
Total, science/engineering ...	819	725	666	888	880	780	622	403	5783
Physical sciences	149	137	148	171	179	164	142	68	1158
Physics/astronomy	67	81	82	85	90	82	69	30	586
Astronomy(1)	1	4	7	8	5	3	5	1	34
Astrophysics(1)	3	3	3	4	5	6	2	4	30
Atomic/molecular	3	8	4	6	5	12	4	0	42
Electromagnetism(2)	0	2	1	0	0	-	-	-	3
Acoustics	1	0	2	1	0	0	1	1	6
Fluids	0	1	0	0	1	2	0	0	4
Plasma(4)	3	4	4	6	4	2	4	2	29
Optics	3	2	1	0	1	0	3	0	10
Thermal(5)	0	1	0	1	1	0	0	-	3
Elementary particles ...	3	5	3	12	11	7	11	3	55
Nuclear structure	5	0	7	8	6	4	7	0	37
Solid state	16	19	18	13	19	13	12	4	114
Physics, general	20	24	27	19	24	29	13	10	166
Physics, other	9	8	5	7	8	4	7	5	53
Chemistry	82	56	66	86	89	82	73	38	572
Analytical	4	3	6	9	9	9	9	1	50
Inorganic	5	6	5	13	11	5	8	5	58
Organic	22	16	15	22	24	18	11	15	143
Nuclear chemistry	2	0	1	1	3	0	1	0	8
Physical	15	8	14	15	14	13	14	4	97
Theoretical chemistry ..	1	1	1	1	0	2	0	0	6
Agricultural/food(8) ...	0	1	0	0	2	-	-	-	3
Pharmaceutical	5	3	1	2	3	2	2	0	18
Polymer(9)	0	0	1	2	3	5	0	0	11
Chemistry, general	27	15	19	19	12	25	26	11	154
Chemistry, other	1	3	3	2	8	3	2	2	24
Earth, env & marine sciences	29	28	28	40	32	24	16	10	207
Mineralogy, petrology(10)	1	2	2	4	2	2	1	1	15
Geochemistry(10)	4	2	4	3	2	0	1	0	16
Stratigraphy, sediment .	1	1	1	3	2	2	0	0	10
Paleontology	1	3	0	0	1	0	1	1	7
Structural geology	0	1	2	1	0	1	0	0	5
Geophysics	6	0	-	-	-	-	-	-	6
Geophysics, solid earth(11)	-	4	0	1	6	1	3	1	16
Geomorph/glacial geol...	2	1	0	1	0	0	0	0	4
Hydrology/water res(12).	0	0	1	2	4	1	0	1	9
Oceanography	4	6	5	6	3	1	4	1	30
Marine sci, other(13) ..	-	-	1	1	1	1	0	0	4
Meteorology(14)	3	0	-	-	-	-	-	-	3
Atmospheric phys/chem(11)	-	1	0	0	0	1	0	1	3
Atmospheric dynamics(11)	-	1	0	2	2	0	0	0	5
Atmospheric sci, other(11)	-	0	2	1	2	1	0	1	7
Environ science, general	2	2	2	1	1	0	0	0	8
Environ science, other .	0	0	1	2	1	2	0	0	6
Applied geology(15)	1	1	1	2	1	1	0	0	7
Earth science, general .	0	2	3	8	3	9	5	1	31
Earth science, other ...	4	1	3	2	1	1	1	2	15
Engineering	177	109	83	98	107	85	54	58	771
Aeronaut/astronautical(16)	8	4	1	1	4	2	4	0	24
Agricultural	2	0	0	0	2	3	1	0	8
Biomedical(17)	5	1	4	5	2	7	4	3	31
Chemical	22	17	12	7	9	8	4	7	86
Civil	20	10	9	3	5	5	5	3	60
Ceramic	2	1	0	0	2	1	0	0	6
Computer(18)	5	8	2	2	3	0	0	3	23
Electrical	29	19	20	24	25	19	13	14	163
Electronics	4	3	2	7	3	5	1	2	27
Industrial	2	2	3	3	4	2	2	0	18
Nuclear engineering(19).	5	1	2	5	3	3	4	2	25
Engineering mechanics ..	12	3	2	4	7	2	3	0	33
Engineering physics(19).	1	0	1	0	0	1	0	0	3
Mechanical	21	17	4	8	13	5	4	12	84
Metallurgy/phys met(20).	10	10	5	10	2	4	0	3	44
Systems design(18)	4	1	0	0	4	1	2	0	12
Operations research(21).	8	2	1	5	1	2	1	0	20
Fuel technology(22)	1	0	1	0	1	1	0	3	7
Sanitary/environmental(23)	2	2	2	3	5	1	1	0	16
Mining(25)	1	0	0	0	0	0	0	1	2
Materials science(17) ..	6	4	5	4	5	5	4	2	35
Engineering, general ...	3	2	1	5	0	5	0	2	18
Engineering, other	4	2	6	2	7	3	1	1	26

See footnotes at end of table.

Table 3. New science and engineering doctorates awarded to U.S. citizens and non-U.S. citizens with permanent visas by subfield and race: 1975-82--con.

Other and Unknown

Field of study	1975	1976	1977	1978	1979	1980	1981	1982	Total 1975-82
	Year of doctorate								
Mathematical sciences	43	42	35	50	40	43	30	22	305
Algebra	0	2	1	2	3	3	1	1	13
Analysis/funct anyl(26)	5	1	3	6	7	3	1	3	29
Geometry	1	2	1	4	1	0	1	0	10
Logic	2	1	1	1	1	3	0	0	9
Number theory	1	0	0	0	1	1	1	2	6
Probability/math stat(27)	3	5	2	4	4	3	3	2	26
Topology	5	3	3	5	2	1	4	2	25
Computing theory	3	3	5	5	0	0	0	0	18
Computer science(13)	0	0	3	9	9	16	8	4	49
Operations research(29)	2	3	1	0	2	2	0	1	11
Applied mathematics	6	3	4	3	3	6	5	4	34
Mathematics, general	14	15	10	11	6	4	5	2	67
Mathematics, other	1	2	1	0	1	1	1	1	8
Life sciences	144	160	138	219	223	226	179	127	1416
Biological sciences	127	144	123	191	191	201	153	113	1243
Biochemistry	24	19	20	26	27	43	23	17	199
Biophysics	6	5	8	8	12	10	3	4	56
Biometry, biostatistics	1	1	1	3	2	0	2	0	10
Anatomy	3	7	4	5	8	6	3	5	41
Cytology(30)	1	5	1	1	5	4	2	0	19
Embryology	2	0	0	0	2	1	0	0	5
Immunology(31)	3	4	2	3	8	9	3	4	36
Botany	4	5	5	4	7	5	6	3	39
Ecology	1	6	6	1	12	8	8	6	48
Hydrobiology(8)	1	0	0	0	1	-	-	-	2
Microbiology/bacteriol(32)	12	14	13	23	21	16	16	13	128
Animal physiology(33)	12	6	10	19	10	28	11	6	102
Plant physiology(33)	1	2	2	3	1	2	4	0	15
Zoology	11	10	10	7	19	8	5	4	74
Genetics	2	4	4	7	3	4	5	4	33
Entomology	7	4	6	1	3	6	5	6	38
Molecular biology(17)	2	4	5	13	9	12	10	2	57
Nutrition/dietetics(11)	-	2	3	7	4	2	8	1	27
Parasitology(9)	-	0	0	0	1	0	1	0	2
Pathology	2	7	6	5	4	6	4	0	34
Pharmacology	4	10	4	19	14	14	12	14	91
Neurosciences(35)	0	0	0	0	0	0	0	3	3
Biological sci, general	14	23	11	26	11	8	16	14	123
Biological sci, other	14	6	2	10	7	9	6	7	61
Agricultural sciences	17	16	15	28	32	25	26	14	173
Agronomy	1	3	4	5	7	5	2	4	31
Animal husbandry	0	0	1	0	0	1	1	0	3
Food sci/technology(17)	4	2	2	4	2	3	4	0	21
Fish/wildlife	2	3	1	1	3	1	3	1	15
Forestry	1	0	2	7	3	1	1	2	17
Horticulture	0	1	2	2	2	1	2	1	11
Soils/soil science(36)	2	0	1	1	4	3	3	0	14
Animal sci/nutrition(37)	5	4	2	3	8	6	3	4	35
Phytopathology	1	1	0	4	1	3	2	1	13
Agriculture, general	0	0	0	1	0	0	0	0	1
Agriculture, other	1	2	0	0	2	1	5	1	12
Social sciences	168	161	131	158	164	120	121	69	1092
Anthropology	27	24	22	27	34	23	25	10	192
Archeology	0	1	1	1	1	2	1	0	7
Hist/phil of science(38)	2	5	1	0	6	2	3	1	20
Linguistics	16	7	6	13	5	7	5	6	65
Sociology	31	32	29	30	29	20	18	12	201
Economics	41	42	28	38	50	30	37	16	282
Econometrics	0	3	3	1	1	1	0	0	9
Agricultural economics(17)	4	7	2	2	6	7	5	4	37
Statistics(39)	1	2	1	1	1	0	1	0	7
Geography	5	4	10	9	5	6	6	4	49
Pol sci, public admin(40)	41	5	0	0	0	0	0	0	46
Political science(40)	0	29	28	36	26	22	20	16	177
Psychology	109	88	103	152	135	118	80	49	834
Clinical	12	18	15	27	43	31	29	12	187
Counseling/guidance	6	1	10	13	12	10	3	3	58
Developmental/gerontol	3	1	6	8	9	9	5	0	41
Educational	5	5	1	7	8	6	5	5	42
School	4	2	2	6	1	2	4	1	22
Experimental(41)	8	12	13	10	14	12	3	1	73
Comparative(41)	2	1	0	0	2	1	0	0	6
Physiological(41)	1	5	5	5	0	3	1	0	20
Industrial/personnel	2	1	1	1	2	3	3	0	13
Personality	5	1	2	4	4	4	1	3	24
Psychometrics	2	1	0	1	1	0	0	0	5
Social	7	8	6	11	4	2	3	2	43
Psychology, general	44	30	37	50	25	26	22	17	251
Psychology, other	8	2	5	9	10	9	1	5	49
Total, non-sci/engineering(43)	560	568	523	669	672	505	457	246	4200
Total, all fields	1379	1293	1189	1557	1552	1285	1079	649	9983

See footnotes at end of table.

(1) "Astronomy/astrophysics" was included in the field taxonomy until 1969 when separate entries were introduced. The dash (-) signifies that data are not available for a given time period. For example, data for "astronomy/astrophysics" are not available after 1969, while data for "astronomy" or "astrophysics" are not available prior to 1969. A zero (0) signifies that no doctorates were produced.

(2) This subfield was originally called "Electricity and Magnetism." In 1966 the name was changed to "Electromagnetism." In 1980 this subfield was deleted from the taxonomy.

(3) "Thermal physics" was originally shown as one subfield, "Mechanics and Heat." In 1960 this subfield was separated into "Mechanics" and "Heat (Thermal)." The latter was subsequently changed to "Thermal Phenomena" in 1963 and then to "Thermal Physics" in 1967. "Mechanics" was deleted from the taxonomy in 1977.

(4) "Plasma physics" was not added until 1969.

(5) This subfield was added in 1960 under the original name of "Heat (Thermal)." See footnote 3 for more information.

(6) This subfield was deleted in 1962.

(7) This subfield was deleted in 1962, but some entries appear for 1962 and 1963 due to use of outdated forms by some institutions.

(8) This subfield was deleted in 1980.

(9) This subfield was introduced in 1973.

(10) "Mineralogy, petrology, and geochemistry" was split into two separate subfields in 1969.

(11) This subfield was introduced in 1976.

(12) This subfield was originally listed as "Hydrology." "Water Resources" was added to the title in 1977.

(13) This subfield was introduced in 1977.

(14) This subfield was deleted in 1976.

(15) In 1960 "Geophysical Engineering" and "Geological Engineering" were merged into "Geo-engineering." "Geo-engineering" became "Applied Geology, Geological Engineering, Economic Geology, and Petroleum Engineering" in 1962 and was split into "Applied Geology, Geological Engineering and Economic Geology" and "Fuel Technology and Petroleum Engineering" in 1969.

(16) This subfield was originally named "Aeronautical Engineering." In 1966 the term "Astronautical" was added.

(17) This subfield was introduced in 1969.

(18) This subfield was introduced in 1975.

(19) In 1961 "Nuclear Engineering" was deleted from the taxonomy, and previous cases were added to "Engineering Physics." In 1969 "Nuclear Engineering" was reinstated in the taxonomy.

(20) This subfield was originally specified as "Metallurgy and Metallurgical Engineering." The term "Physical" was introduced in 1967.

(21) This subfield was introduced in 1972.

(22) This subfield's full title is "Fuel Technology and Petroleum Engineering." It was added to the Engineering section of the taxonomy in 1972. (See also footnote 15.)

(23) This subfield was originally called "Sanitary Engineering." The term Environmental" was added in 1977.

(24) This subfield was deleted from the taxonomy in 1969.

(25) "Mining Engineering" was originally deleted in 1961 but was restored to the taxonomy in 1969.

(26) This subfield was specified as "Analysis" through 1967. "Functional Analysis" was added in 1968

(27) "Math Statistics" was deleted from the taxonomy in 1969 but was restored in 1972.

(28) This subfield was deleted in 1967.

(29) This subfield was introduced in 1973.

(30) This subfield was introduced in 1962.

(31) This subfield was introduced in 1972.

(32) This subfield was originally called "Microbiology." "Bacteriology" was added in 1970.

(33) In 1962 "Animal and Plant Physiology" was separated into "Animal Physiology" and "Plant Physiology."

(34) This subfield was deleted in 1960.

(35) This subfield was introduced in 1982.

(36) This subfield was added in 1969 under the name of "Range Management." In 1972 the title was changed to "Soils and Soils Science." Previous cases under "Range Management" were converted to "Agriculture, Other."

(37) This subfield was introduced as "Animal Sciences" in 1973. The title was changed to "Animal Science and Animal Nutrition" in 1977.

(38) This subfield was introduced in 1971.

(39) This subfield was introduced in 1967.

(40) "Political Science, Public Administration" was split into two separate subfields in 1976.

(41) "Experimental, Comparative and Physiological Psychology" was split into three separate subfields in 1962.

(42) This subfield was deleted from the published taxonomy in 1962 but "write-in" responses were coded until 1969. Beginning in 1969, write-responses were included with "Psychology, Other."

(43) Non-science/engineering doctorates in this table include doctorates whose field of specialization is unknown.

Table 4. Median age of new science and engineering doctorates by major field and sex: 1960-82

Total, male and female

	Year of doctorate												
Age at PhD	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	Total 1960-69	1970	1971
Total, sci/eng	30.30	30.31	30.30	30.07	30.02	29.75	29.61	29.47	29.44	29.25	29.74	29.13	29.30
Physical sciences.	28.47	28.73	28.65	28.47	28.35	28.29	28.19	28.11	28.07	28.04	28.26	28.19	28.28
Physics/astron .	29.05	29.22	29.24	28.97	28.75	28.67	28.54	28.54	28.53	28.48	28.70	28.58	28.80
Chemistry	28.18	28.53	28.21	28.16	28.10	28.00	27.90	27.73	27.55	27.61	27.92	27.88	27.92
Earth/env/mar sci.	30.14	30.76	30.97	30.19	30.91	30.40	30.54	30.42	30.30	30.61	30.50	30.51	30.45
Engineering	30.17	29.78	29.83	29.63	29.73	29.66	29.74	29.88	29.80	29.63	29.76	29.58	29.86
Chemical	29.00	28.47	28.53	28.09	28.67	28.35	28.18	28.46	28.16	28.31	28.36	28.58	28.54
Civil	31.30	31.00	31.06	30.66	30.66	31.35	31.29	30.88	30.52	30.94	30.94	30.26	31.03
Electrical	30.58	29.59	29.81	29.89	29.73	29.49	29.85	29.73	29.92	29.60	29.77	29.23	29.46
Mechanical	30.70	30.79	30.06	29.94	30.00	30.09	29.97	30.42	30.09	29.92	30.10	30.27	30.33
Mathematical sci .	29.79	29.95	29.28	29.20	28.63	28.21	28.03	28.14	28.01	28.03	28.38	28.06	28.37
Life sciences	30.97	30.74	30.75	30.87	30.76	30.56	30.41	30.22	29.90	29.50	30.36	29.20	29.39
Agricultural sci	30.91	30.90	31.01	31.14	32.02	31.45	31.88	31.89	31.64	30.56	31.35	30.18	30.77
Biological sci .	30.99	30.70	30.66	30.76	30.32	30.35	30.00	29.83	29.49	29.31	30.09	29.02	29.14
Social sciences ..	33.14	32.76	33.02	32.86	32.22	32.33	32.20	31.86	31.71	31.36	32.20	31.07	30.83
Psychology	31.00	31.37	31.61	30.76	30.88	30.54	30.17	30.00	29.87	29.23	30.39	28.96	28.92
Total, non-sci/eng(1)	35.87	35.76	35.43	35.38	35.24	35.36	35.71	35.28	35.44	34.95	35.38	34.64	34.51
Total, all fields ...	31.83	31.78	31.77	31.73	31.06	31.47	31.39	31.21	31.11	30.85	31.39	30.74	30.78
Male													
Total, sci/eng	30.21	30.22	30.20	29.99	29.93	29.70	29.56	29.44	29.41	29.21	29.68	29.11	29.27
Physical sciences.	28.47	28.71	28.67	28.48	28.35	28.30	28.21	28.12	28.05	28.03	28.27	28.17	28.29
Physics/astron .	29.07	29.19	29.23	28.97	28.71	28.66	28.56	28.57	28.53	28.47	28.71	28.57	28.80
Chemistry	28.15	28.49	28.24	28.16	28.11	28.00	27.90	27.71	27.50	27.57	27.91	27.84	27.91
Earth/env/mar sci.	30.11	30.72	30.88	30.19	30.90	30.41	30.54	30.45	30.34	30.59	30.50	30.47	30.46
Engineering	30.16	29.78	29.82	29.61	29.74	29.66	29.73	29.88	29.80	29.63	29.75	29.57	29.87
Chemical	29.00	28.47	28.50	28.06	28.63	28.35	28.16	28.50	28.15	28.32	28.36	28.58	28.53
Civil	31.20	31.00	31.06	30.60	30.63	31.35	31.29	30.86	30.52	30.94	30.92	30.27	31.01
Electrical	30.62	29.63	29.79	29.91	29.76	29.48	29.86	29.73	29.92	29.58	29.77	29.22	29.46
Mechanical	30.70	30.75	30.06	29.94	30.02	30.09	29.96	30.42	30.09	29.92	30.10	30.25	30.33
Mathematical sci .	29.73	29.88	29.26	29.30	28.55	28.18	27.98	28.09	28.00	28.01	28.35	28.08	28.38
Life sciences	30.92	30.73	30.70	30.85	30.75	30.61	30.50	30.28	30.06	29.58	30.41	29.30	29.43
Agricultural sci	30.89	30.88	30.98	31.11	32.04	31.49	31.92	31.88	31.69	30.58	31.36	30.17	30.77
Biological sci .	30.93	30.67	30.59	30.74	30.27	30.39	30.05	29.87	29.62	29.37	30.12	29.12	29.14
Social sciences ..	32.95	32.67	32.77	32.72	32.05	32.27	32.03	31.66	31.55	31.16	32.03	31.01	30.68
Psychology	30.73	31.06	31.34	30.56	30.57	30.11	29.92	29.77	29.65	28.95	30.13	28.78	28.66
Total, non-sci/eng(1)	35.30	35.07	34.79	34.75	34.74	34.83	35.20	34.81	34.93	34.49	34.85	34.18	34.07
Total, all fields ...	31.54	31.46	31.48	31.44	31.37	31.23	31.12	30.93	30.87	30.59	31.12	30.50	30.52
Female													
Total, sci/eng	31.88	32.20	31.93	31.30	31.54	30.47	30.31	30.17	29.82	29.76	30.59	29.25	29.59
Physical sciences.	29.50	29.36	28.06	28.31	28.41	28.09	27.93	27.68	28.40	28.14	28.21	28.60	28.12
Physics/astron .	*	*	*	*	*	28.88	28.00	27.50	28.75	28.75	28.63	28.92	28.93
Chemistry	29.67	29.14	27.50	28.23	27.95	27.97	27.92	28.00	28.33	28.00	28.12	28.50	27.95
Earth/env/mar sci.	*	*	*	*	*	*	*	*	*	33.00	31.00	*	*
Engineering	*	*	*	*	*	*	*	*	*	*	30.39	*	*
Chemical	*	*	*	*	*	*	*	*	*	*	*	*	*
Civil	*	*	*	*	*	*	*	*	*	*	*	*	*
Electrical	*	*	*	*	*	*	*	*	*	*	*	*	*
Mechanical	*	*	*	*	*	*	*	*	*	*	*	*	*
Mathematical sci .	*	*	29.75	27.75	30.00	29.00	29.17	29.67	28.19	28.31	28.94	27.88	28.20
Life sciences	31.40	31.00	31.42	31.08	30.82	30.00	29.64	29.61	28.89	29.04	29.83	28.54	29.20
Agricultural sci	*	*	*	*	*	*	*	*	*	*	30.50	30.33	30.75
Biological sci .	31.42	30.95	31.29	30.96	30.91	29.90	29.68	29.52	28.91	29.00	29.79	28.49	29.16
Social sciences ..	35.64	33.75	36.14	34.50	35.75	33.75	34.00	34.43	33.39	34.32	34.32	31.46	31.98
Psychology	32.90	33.44	34.00	32.13	32.92	33.63	31.35	31.11	31.18	30.69	32.00	29.60	29.88
Total, non-sci/eng(1)	39.19	39.91	39.82	40.00	38.75	38.87	38.63	38.24	37.94	37.57	38.60	37.19	36.94
Total, all fields ...	36.15	36.56	36.17	36.04	35.75	34.98	34.73	34.65	34.01	33.69	34.97	33.06	32.96

See footnotes at end of table.

Table 4. Median age of new science and engineering doctorates by major field and sex: 1960-82--con.

Total, male and female

Age at PhD	1972	1973	1974	1975	1976	1977	1978	1979	Total 1970-79	1980	1981	1982	Total 1980-82	Total 1960-82
	Year of doctorate													
Total, sci/eng	29.61	29.91	29.96	29.85	29.86	29.97	30.07	30.16	29.78	30.19	30.31	30.45	30.32	29.86
Physical sciences.	28.61	28.87	28.85	28.68	28.79	28.99	29.03	28.60	28.64	28.74	28.59	28.76	28.69	28.50
Physics/astron .	28.98	29.21	29.27	29.31	29.14	29.47	29.55	29.20	29.11	29.43	29.09	29.59	29.35	29.00
Chemistry	28.29	28.48	28.46	28.31	28.52	28.57	28.67	28.23	28.29	28.27	28.27	28.31	28.29	28.17
Earth/env/mar sci.	30.53	30.52	30.96	30.69	30.23	30.49	30.47	30.25	30.51	30.82	30.92	30.75	30.82	30.56
Engineering	30.03	30.39	30.31	30.20	30.20	30.01	30.19	30.32	30.11	30.26	30.54	30.71	30.49	30.06
Chemical	28.59	29.10	29.03	29.25	29.10	29.05	29.19	28.42	28.89	29.00	29.19	29.34	29.19	28.74
Civil	30.68	31.54	31.26	31.50	31.93	31.30	30.89	31.36	31.16	31.93	31.37	31.39	31.51	31.15
Electrical	29.89	30.15	30.07	29.79	30.04	29.92	29.74	30.32	29.83	29.77	30.12	30.33	30.08	29.84
Mechanical	30.55	30.74	30.79	30.44	30.56	30.65	30.75	30.39	30.55	30.75	30.57	30.90	30.75	30.41
Mathematical sci .	28.92	29.10	29.17	29.09	29.13	29.04	29.40	29.50	28.94	29.33	29.37	29.55	29.42	28.85
Life sciences	29.70	29.98	29.90	29.72	29.72	29.75	29.78	29.78	29.69	29.73	29.75	29.94	29.81	29.89
Agricultural sci	31.09	31.24	31.19	30.97	31.44	31.17	31.19	31.17	31.07	31.35	31.50	31.17	31.33	31.20
Biological sci .	29.41	29.67	29.56	29.43	29.39	29.42	29.46	29.48	29.40	29.38	29.43	29.70	29.50	29.58
Social sciences ..	30.77	31.09	31.35	31.43	31.47	31.80	31.58	32.15	31.37	32.18	32.29	32.73	32.38	31.72
Psychology	29.28	29.45	29.44	29.51	29.57	29.92	30.05	30.55	29.63	30.61	31.37	31.50	31.19	30.11
Total, non-sci/eng(1)	34.30	34.14	34.03	34.30	34.34	34.53	34.70	34.93	34.44	35.35	35.52	35.77	35.55	34.88
Total, all fields ...	31.08	31.27	31.41	31.49	31.59	31.59	31.67	31.92	31.37	32.18	32.37	32.53	32.36	31.54
Male														
Total, sci/eng	29.63	29.93	30.00	29.90	29.87	29.99	30.06	30.11	29.77	30.14	30.21	30.40	30.25	29.82
Physical sciences.	28.62	28.89	28.37	28.72	28.84	29.03	29.11	28.62	28.66	28.84	28.59	28.81	28.74	28.51
Physics/astron .	28.99	29.22	29.25	29.36	29.20	29.49	29.57	29.20	29.12	29.45	29.06	29.57	29.34	29.01
Chemistry	28.28	28.49	28.49	28.33	28.56	28.63	28.76	28.23	28.30	28.35	28.26	28.33	28.31	28.17
Earth/env/mar sci.	30.59	30.60	30.95	30.74	30.21	30.65	30.48	30.34	30.55	30.87	31.06	30.90	30.94	30.60
Engineering	30.09	30.40	30.32	30.22	30.21	30.04	30.21	30.36	30.12	30.30	30.61	30.78	30.55	30.07
Chemical	28.59	29.10	29.02	29.24	29.10	29.11	29.19	28.42	28.89	29.04	29.26	29.36	29.23	28.74
Civil	30.69	31.59	31.29	31.55	31.94	31.41	30.89	31.35	31.18	31.93	31.39	31.43	31.55	31.16
Electrical	29.89	30.17	30.08	29.85	30.08	29.94	29.75	30.36	29.85	29.81	30.15	30.39	30.12	29.86
Mechanical	30.57	30.76	30.80	30.48	30.51	30.66	30.75	30.42	30.56	30.81	30.63	30.93	30.79	30.42
Mathematical sci .	28.94	29.12	29.21	29.08	29.13	29.04	29.41	29.54	28.94	29.22	29.33	29.49	29.35	28.82
Life sciences	29.82	30.12	30.05	29.87	29.86	29.87	29.80	29.88	29.80	29.80	29.81	30.08	29.90	29.99
Agricultural sci	31.10	31.31	31.20	31.01	31.52	31.23	31.17	31.44	31.11	31.54	31.66	31.44	31.55	31.26
Biological sci .	29.50	29.78	29.72	29.57	29.46	29.48	29.42	29.48	29.46	29.36	29.42	29.77	29.51	29.65
Social sciences ..	30.72	31.08	31.40	31.48	31.47	31.75	31.45	32.01	31.31	32.09	32.20	32.62	32.28	31.63
Psychology	29.10	29.33	29.40	29.50	29.47	29.89	30.10	30.45	29.50	30.44	31.17	31.22	30.96	29.91
Total, non-sci/eng(1)	33.90	33.82	33.80	34.01	34.16	34.27	34.42	34.65	34.12	34.89	35.04	35.36	35.11	34.47
Total, all fields ...	30.87	31.09	31.27	31.30	31.34	31.32	31.34	31.55	31.12	31.73	31.80	31.99	31.84	31.22
Female														
Total, sci/eng	29.47	29.68	29.61	29.52	29.80	29.87	30.12	30.35	29.81	30.37	30.67	30.68	30.57	30.12
Physical sciences.	28.44	28.60	28.45	28.27	28.21	28.44	28.32	28.45	28.37	28.20	28.57	28.48	28.41	28.34
Physics/astron .	28.44	29.06	29.79	28.60	28.05	29.12	29.21	29.21	28.91	29.14	29.58	29.75	29.48	29.00
Chemistry	28.44	28.42	28.17	28.09	28.26	28.22	28.16	28.21	28.23	27.91	28.33	28.21	28.15	28.19
Earth/env/mar sci.	29.75	28.75	31.13	29.83	30.43	29.19	30.33	29.14	29.85	30.50	29.94	29.82	29.98	30.00
Engineering	29.25	29.00	29.10	29.17	29.60	28.18	29.69	29.29	29.19	28.92	29.03	29.54	29.23	29.30
Chemical	*	*	*	*	*	*	*	*	28.69	*	*	*	28.50	28.74
Civil	*	*	*	*	*	*	*	*	29.67	*	*	*	30.67	30.25
Electrical	*	*	*	*	*	*	*	*	28.19	*	*	*	29.06	28.71
Mechanical	*	*	*	*	*	*	*	*	29.42	*	*	*	29.29	29.38
Mathematical sci .	28.60	28.72	28.75	29.17	29.13	29.04	29.31	29.37	28.95	30.20	29.62	30.05	29.89	29.14
Life sciences	29.01	29.30	29.08	28.97	29.18	29.27	29.72	29.43	29.21	29.48	29.56	29.54	29.53	29.38
Agricultural sci	30.75	29.67	31.00	30.38	30.50	30.00	31.42	28.63	30.18	29.85	30.36	29.71	29.95	30.11
Biological sci .	28.92	29.28	28.95	28.89	29.12	29.23	29.61	29.48	29.16	29.44	29.46	29.52	29.48	29.33
Social sciences ..	31.09	31.14	31.08	31.23	31.47	32.00	32.03	32.74	31.66	32.42	32.63	33.01	32.69	32.19
Psychology	29.93	29.95	29.57	29.55	29.87	29.98	29.94	30.77	29.98	30.91	31.68	31.92	31.55	30.66
Total, non-sci/eng(1)	36.35	35.32	34.94	35.27	35.02	35.23	35.31	35.47	35.52	36.09	36.53	36.44	36.35	36.24
Total, all fields ...	32.86	32.58	32.30	32.46	32.62	32.81	32.93	33.14	32.77	33.49	33.80	33.95	33.75	33.33

* Asterisks indicate too few cases (under 20 cases) present within a cell to compute a median.

(1) Non-science/engineering doctorates in this table include doctorates whose field of specialization is unknown.

SOURCES: National Science Foundation and National Research Council

Table 5. Distribution of non-U.S. citizens awarded science and engineering doctorates by country of citizenship and major field: for selected years

Total, science and engineering

Country of citizenship	Year of doctorate 1960-64	1965-69	1970-74	1975-79	1980	1981	1982	Total 1960-82
Total, foreign citizenship ..	6060	11635	18596	18331	3578	3768	3877	65845
Canada	713	1227	1590	948	150	153	145	4926
Mexico & Central America	85	187	249	345	71	96	88	1121
Mexico	56	129	179	253	57	74	69	817
Cuba & islands	20	107	132	123	21	22	17	442
South America	136	427	1011	1244	263	288	232	3601
Argentina	22	75	208	115	25	26	24	495
Brazil	29	103	255	478	120	134	91	1210
Chile	31	81	155	187	25	34	27	560
Columbia	21	58	143	144	22	19	26	433
Europe	713	1381	2535	2070	351	396	407	7853
Belgium	20	58	129	75	10	20	15	327
England	232	446	722	529	85	98	88	2200
France	33	86	230	188	14	24	36	611
Fed Rep Ger/Ger Dem Rep(1)	74	160	278	162	27	33	35	769
Greece	87	170	259	299	[illegible]1	63	60	999
Italy	27	55	102	78	15	17	23	317
East Asia	984	2656	4880	4642	829	872	1049	15912
China (including Taiwan)(2)	511	1706	2985	2355	631	451	562	9001
Hong Kong	3	63	240	481	85	93	91	1056
Japan, Okinawa, Ryukyus ..	189	276	501	421	66	75	85	1613
Korea	190	421	706	693	124	129	166	2429
Thailand	54	102	235	455	72	79	90	1087
West Asia	1527	3056	4880	4260	885	904	994	16506
India	991	1844	2848	2123	370	376	354	8906
Iran	74	192	415	589	204	189	244	1907
Iraq	71	146	153	82	27	27	26	532
Israel	135	288	424	420	63	91	78	1499
Lebanon	32	78	103	105	18	18	21	375
Turkey	42	123	335	364	62	48	68	1042
Pakistan	98	240	267	152	40	25	42	864
Australasia	274	573	823	579	117	125	137	2628
Australia	102	184	304	184	44	36	45	899
Indonesia, Republic of ...	33	83	93	110	20	39	29	407
New Zealand	37	88	112	90	22	13	19	381
Philippines	102	217	312	195	30	37	44	937
Africa	247	742	1134	1147	308	366	369	4313
Egypt	151	479	392	213	73	77	82	1467
Nigeria	0	0	106	331	84	121	91	733
Country unknown	1361	1279	1362	2973	583	546	439	8543

See footnotes at end of table.

Table 5. Distribution of non-U.S. citizens awarded science and engineering doctorates by country of citizenship and major field: for selected years--con.

Physical sciences

Country of citizenship	Year of doctorate 1960-64	1965-69	1970-74	1975-79	1980	1981	1982	Total 1960-82
Total, foreign citizenship ..	1256	2231	3413	3099	577	589	624	11789
Canada	108	176	213	97	19	18	14	645
Mexico & Central America	13	22	36	37	5	4	12	129
Mexico	11	18	24	26	4	3	9	95
Cuba & islands	4	12	21	15	3	4	4	63
South America	28	58	150	153	27	28	25	469
Argentina	6	14	50	16	6	3	5	100
Brazil	6	20	30	35	7	8	8	114
Chile	8	8	26	35	5	5	3	90
Columbia	1	3	15	18	3	1	2	43
Europe	161	273	469	349	56	67	73	1448
Belgium	3	11	19	10	1	1	3	48
England	50	84	135	81	12	19	10	391
France	5	16	39	20	2	3	7	92
Fed Rep Ger/Ger Dem Rep(1)	23	39	49	26	5	7	8	157
Greece	26	46	63	66	13	4	10	228
Italy	3	11	30	17	1	5	9	76
East Asia	263	723	1282	1040	169	164	199	3840
China (including Taiwan)(2)	126	464	831	636	104	97	126	2384
Hong Kong	3	32	106	148	23	21	21	354
Japan, Okinawa, Ryukyus ..	54	83	111	76	6	12	12	354
Korea	66	104	161	113	23	24	24	515
Thailand	6	6	21	32	10	4	10	89
West Asia	312	554	734	682	166	162	179	2789
India	221	404	484	424	91	92	94	1810
Iran	13	21	59	70	29	30	30	252
Iraq	12	19	17	1	0	1	2	52
Israel	21	31	33	50	5	8	8	156
Lebanon	11	15	23	15	3	4	5	76
Turkey	6	19	37	38	12	3	10	125
Pakistan	15	22	27	26	11	3	7	111
Australasia	37	76	122	59	9	12	13	328
Australia	10	16	30	18	3	3	4	84
Indonesia, Republic of ...	9	15	19	6	2	2	2	55
New Zealand	4	19	14	10	2	0	1	50
Philippines	14	25	59	25	2	7	6	138
Africa	29	88	103	92	16	22	31	381
Egypt	23	62	38	21	3	7	7	161
Nigeria	0	0	5	23	6	4	6	44
Country unknown	301	249	283	575	107	108	74	1697

See footnotes at end of table.

Table 5. Distribution of non-U.S. citizens awarded science and engineering doctorates by country of citizenship and major field: for selected years--con.

Earth, environmental, and marine sciences

Country of citizenship	Year of doctorate 1960-64	1965-69	1970-74	1975-79	1980	1981	1982	Total 1960-82
Total, foreign citizenship ..	220	393	580	578	106	101	109	2087
Canada	65	104	90	57	8	7	8	339
Mexico & Central America	0	1	4	15	7	5	3	35
Mexico	0	1	4	13	7	5	2	32
Cuba & islands	0	1	4	7	0	1	0	13
South America	7	11	35	46	14	6	7	126
Argentina	1	3	5	3	1	1	2	16
Brazil	0	1	7	15	7	1	4	35
Chile	1	3	4	7	1	1	0	17
Columbia	1	2	2	6	1	1	1	14
Europe	26	62	90	74	7	21	18	298
Belgium	0	2	6	6	0	3	0	17
England	15	28	30	27	4	7	10	121
France	1	3	8	10	1	2	1	26
Fed Rep Ger/Ger Dem Rep(1)	1	11	5	3	0	2	0	22
Greece	0	4	0	6	0	2	2	14
Italy	2	2	4	1	0	0	0	9
East Asia	15	37	98	131	28	12	31	352
China (including Taiwan)(2)	8	27	71	76	20	10	22	234
Hong Kong	0	0	0	7	1	2	0	10
Japan, Okinawa, Ryukyus ..	5	4	9	13	0	0	2	33
Korea	2	2	13	27	3	0	6	53
Thailand	0	1	4	6	2	0	0	13
West Asia	35	77	133	103	16	10	13	387
India	23	34	58	44	2	7	6	174
Iran	5	8	12	9	10	1	3	48
Iraq	0	11	4	0	0	0	1	16
Israel	4	9	20	15	2	0	0	50
Lebanon	0	0	0	2	0	0	0	2
Turkey	1	4	17	9	2	0	1	34
Pakistan	0	6	8	3	0	1	2	20
Australasia	17	34	47	32	4	9	10	153
Australia	7	15	28	18	4	3	5	80
Indonesia, Republic of ...	2	3	5	2	0	1	0	13
New Zealand	4	12	6	4	0	4	4	34
Philippines	4	4	8	8	0	1	1	26
Africa	6	31	46	30	9	17	9	148
Egypt	3	21	14	6	0	1	1	46
Nigeria	0	0	4	10	4	8	5	31
Country unknown	49	35	33	83	13	13	10	236

See footnotes at end of table.

Table 5. Distribution of non-U.S. citizens awarded science and engineering doctorates by country of citizenship and major field: for selected years--con.

Engineering

Country of citizenship	Year of doctorate 1960-64	1965-69	1970-74	1975-79	1980	1981	1982	Total 1960-82
Total, foreign citizenship ..	1326	3142	5488	5765	1150	1243	1324	19438
Canada	97	238	191	86	20	17	18	667
Mexico & Central America	9	36	53	85	17	24	17	241
Mexico	7	26	47	73	13	21	13	200
Cuba & islands	3	19	20	14	2	0	3	61
South America	24	90	202	276	52	74	65	783
Argentina	0	8	16	21	10	6	5	66
Brazil	10	30	81	114	24	36	29	324
Chile	4	17	31	30	3	10	7	102
Columbia	3	11	35	36	3	3	4	95
Europe	159	345	688	514	88	103	112	2009
Belgium	7	20	43	29	4	5	7	115
England	35	79	112	63	19	16	16	340
France	16	35	96	63	6	8	12	236
Fed Rep Ger/Ger Dem Rep(1)	11	37	74	35	5	8	6	176
Greece	19	48	98	109	22	28	23	347
Italy	7	13	29	10	2	2	5	68
East Asia	310	958	1670	1569	304	364	422	5597
China (including Taiwan)(2)	221	729	1111	862	174	223	260	3580
Hong Kong	0	12	46	142	27	27	31	285
Japan, Okinawa, Ryukyus ..	39	72	199	139	27	31	31	538
Korea	36	114	229	250	41	50	62	782
Thailand	8	22	40	140	20	23	25	278
West Asia	340	864	1846	1857	357	372	412	6048
India	203	525	1242	1039	184	176	160	3529
Iran	26	60	169	257	79	74	99	764
Iraq	10	30	40	24	6	4	4	118
Israel	51	89	102	137	21	33	25	458
Lebanon	2	20	31	33	6	8	8	108
Turkey	23	73	152	193	31	30	43	545
Pakistan	9	40	49	47	8	8	13	174
Australasia	30	76	113	68	14	9	21	331
Australia	12	26	49	20	4	4	4	119
Indonesia, Republic of ...	7	9	14	18	4	4	7	63
New Zealand	0	11	13	7	4	0	6	41
Philippines	11	30	37	23	2	1	4	108
Africa	50	149	301	307	96	104	97	1104
Egypt	39	106	170	121	39	41	38	554
Nigeria	0	0	15	73	20	31	16	155
Country unknown	304	367	404	989	200	176	157	2597

See footnotes at end of table.

Table 5. Distribution of non-U.S. citizens awarded science and engineering doctorates by country of citizenship and major field: for selected years--con.

Mathematical sciences

Country of citizenship	Year of doctorate 1960-64	1965-69	1970-74	1975-79	1980	1981	1982	Total 1960-82
Total, foreign citizenship ..	349	665	1192	1212	257	289	304	4271
Canada	36	92	110	68	15	13	16	350
Mexico & Central America	4	5	20	30	2	8	8	77
Mexico	4	5	18	28	2	7	7	71
Cuba & islands	2	2	8	4	0	2	0	18
South America	15	35	90	106	19	21	15	301
Argentina	3	10	39	19	4	1	1	77
Brazil	5	14	27	41	7	12	6	112
Chile	3	6	6	18	2	3	2	40
Columbia	2	2	9	9	2	3	3	30
Europe	48	107	218	197	42	52	61	725
Belgium	2	2	10	2	0	3	1	20
England	11	26	42	30	6	6	9	132
France	5	16	33	27	1	2	5	89
Fed Rep Ger/Ger Dem Rep(1)	6	17	23	22	4	3	10	85
Greece	3	10	15	21	4	5	9	67
Italy	3	5	5	16	5	5	2	41
East Asia	59	137	304	332	61	63	74	1030
China (including Taiwan)(2)	31	82	191	203	40	41	47	635
Hong Kong	0	7	29	67	4	8	11	106
Japan, Okinawa, Ryukyus ..	15	14	26	27	7	4	4	97
Korea	11	23	32	33	6	10	6	121
Thailand	1	4	3	2	1	0	1	12
West Asia	106	173	268	240	51	64	80	982
India	72	114	175	108	17	30	31	547
Iran	2	12	16	31	11	12	25	109
Iraq	8	7	3	3	0	0	0	21
Israel	14	23	30	43	8	14	9	141
Lebanon	0	2	7	14	0	0	0	23
Turkey	0	1	17	15	2	3	4	42
Pakistan	5	6	5	2	4	0	3	25
Australasia	10	29	49	20	10	10	9	137
Australia	1	15	23	7	5	4	5	60
Indonesia, Republic of ...	2	4	2	1	0	2	1	12
New Zealand	3	8	15	8	3	4	2	43
Philippines	4	2	9	4	1	0	1	21
Africa	4	10	44	40	9	15	13	135
Egypt	1	4	10	9	5	3	3	35
Nigeria	0	0	4	12	0	3	3	22
Country unknown	65	78	81	175	48	41	28	516

See footnotes at end of table.

Table 5. Distribution of non-U.S. citizens awarded science and engineering doctorates by country of citizenship and major field: for selected years--con.

Life sciences

Country of citizenship	Year of doctorate 1960-64	1965-69	1970-74	1975-79	1980	1981	1982	Total 1960-82
Total, foreign citizenship ..	1780	3185	4229	3831	778	772	740	15315
Canada	248	307	387	195	36	26	36	1235
Mexico & Central America	31	100	38	115	24	32	33	443
Mexico	30	71	55	70	20	24	29	299
Cuba & islands	6	43	33	33	3	5	3	126
South America	45	141	328	386	96	95	72	1163
Argentina	6	14	39	17	2	8	5	91
Brazil	5	16	60	162	47	48	27	365
Chile	12	29	58	67	10	6	12	194
Columbia	13	29	59	40	7	6	11	165
Europe	174	301	448	365	68	57	56	1469
Belgium	3	12	21	7	0	0	1	44
England	60	116	172	127	19	20	19	533
France	1	5	16	16	0	3	1	42
Fed Rep Ger/Ger Dem Rep(1)	16	20	33	22	6	4	4	105
Greece	22	40	37	54	12	8	6	179
Italy	7	4	10	11	3	1	1	37
East Asia	185	528	966	943	152	161	172	3107
China (including Taiwan)(2)	85	323	607	452	71	61	80	1679
Hong Kong	0	9	48	103	21	25	18	224
Japan, Okinawa, Ryukyus ..	42	43	50	47	7	7	8	204
Korea	26	87	102	100	14	20	25	374
Thailand	22	48	105	165	21	31	24	416
West Asia	505	899	1056	660	141	132	141	3534
India	361	551	592	307	65	40	34	1930
Iran	13	61	80	96	36	31	46	363
Iraq	29	52	72	44	19	21	15	252
Israel	18	59	72	39	6	8	6	208
Lebanon	9	25	16	18	2	2	3	75
Turkey	8	7	28	35	7	4	3	92
Pakistan	37	103	114	42	10	6	8	320
Australasia	109	253	297	191	40	41	45	976
Australia	48	79	91	35	14	6	14	287
Indonesia, Republic of ...	5	27	39	53	4	18	11	157
New Zealand	15	25	34	27	6	3	4	114
Philippines	41	122	132	76	16	14	16	417
Africa	94	310	318	327	105	123	114	1391
Egypt	44	208	94	36	19	14	21	436
Nigeria	0	0	33	92	38	48	32	243
Country unknown	363	303	308	616	113	100	68	1871

See footnotes at end of table.

Table 5. Distribution of non-U.S. citizens awarded science and engineering doctorates by country of citizenship and major field: for selected years--con.

Social sciences

Country of citizenship	Year of doctorate 1960-64	1965-69	1970-74	1975-79	1980	1981	1982	Total 1960-82
Total, foreign citizenship ..	898	1688	3084	3210	589	647	664	10780
Canada	96	216	396	289	30	43	38	1108
Mexico & Central America	6	20	39	51	13	18	14	161
Mexico	3	6	24	36	8	9	8	94
Cuba & islands	5	26	41	35	12	8	4	131
South America	14	77	182	241	48	55	42	659
Argentina	4	23	51	36	2	7	6	129
Brazil	3	16	46	101	26	27	15	234
Chile	3	15	24	26	4	7	3	82
Columbia	1	9	20	30	3	3	5	71
Europe	114	243	522	481	68	77	70	1575
Belgium	5	11	29	19	5	5	2	76
England	45	95	194	158	19	22	19	552
France	5	10	35	48	3	6	10	117
Fed Rep Ger/Ger Dem Rep(1)	12	26	71	42	4	7	3	165
Greece	14	20	42	40	7	15	9	147
Italy	4	18	19	22	2	4	5	74
East Asia	135	249	514	583	105	102	144	1832
China (including Taiwan)(2)	36	72	143	114	18	15	23	421
Hong Kong	0	2	10	25	7	9	10	63
Japan, Okinawa, Ryukyus ..	26	51	103	113	17	21	28	359
Korea	47	89	164	157	36	24	41	558
Thailand	16	20	58	107	17	21	30	269
West Asia	190	426	716	609	127	139	144	2349
India	93	199	264	190	29	28	26	829
Iran	12	26	63	104	25	33	32	295
Iraq	11	25	17	10	2	0	4	69
Israel	21	47	112	85	16	18	20	319
Lebanon	10	15	23	20	6	4	5	83
Turkey	1	14	73	61	5	7	5	166
Pakistan	27	59	59	28	6	6	8	193
Australasia	61	88	166	168	39	38	36	596
Australia	19	25	69	68	14	14	12	221
Indonesia, Republic of ...	8	25	12	29	10	12	8	104
New Zealand	9	10	28	30	6	2	2	87
Philippines	25	28	56	41	9	10	14	183
Africa	55	141	296	328	67	83	92	1062
Egypt	36	70	64	18	6	11	10	215
Nigeria	0	0	37	111	14	29	25	216
Country unknown	222	202	214	425	80	84	80	1307

See footnotes at end of table.

Table 5. Distribution of non-U.S. citizens awarded science and engineering doctorates by country of citizenship and major field: for selected years--con.

Psychology

Country of citizenship	Year of doctorate 1960-64	1965-69	1970-74	1975-79	1980	1981	1982	Total 1960-82
Total, foreign citizenship ..	231	328	610	636	121	127	112	2165
Canada	63	94	203	156	22	29	15	582
Mexico & Central America	2	3	9	12	3	5	1	35
Mexico	1	2	7	7	3	5	1	26
Cuba & islands	0	4	5	15	1	2	3	30
South America	3	15	24	36	7	9	6	100
Argentina	2	3	8	3	0	0	0	16
Brazil	0	6	4	10	2	2	2	26
Chile	0	3	6	4	0	2	0	15
Columbia	0	2	3	5	3	2	0	15
Europe	31	50	100	90	22	19	17	329
Belgium	0	0	1	2	0	3	1	7
England	14	18	37	43	6	8	5	131
France	0	1	3	4	1	0	0	9
Fed Rep Ger/Ger Dem Rep(1)	5	10	23	12	3	2	4	59
Greece	3	2	4	3	3	1	1	17
Italy	1	2	5	1	2	0	1	12
East Asia	17	24	46	44	10	6	7	154
China (including Taiwan)(2)	4	9	31	12	4	4	4	68
Hong Kong	0	1	1	9	2	1	0	14
Japan, Okinawa, Ryukyus ..	8	9	3	6	2	0	0	28
Korea	2	2	5	13	1	1	2	26
Thailand	1	1	4	3	1	0	0	10
West Asia	39	63	129	109	27	25	25	417
India	18	17	33	11	2	3	3	87
Iran	3	4	16	22	14	8	9	76
Iraq	1	2	0	0	0	1	0	4
Israel	6	30	55	51	5	10	10	167
Lebanon	0	1	3	3	1	0	0	8
Turkey	3	5	11	13	3	1	2	38
Pakistan	5	4	5	4	1	1	1	21
Australasia	10	17	29	41	1	6	3	107
Australia	5	8	14	18	0	2	1	48
Indonesia, Republic of ...	0	0	2	1	0	0	0	3
New Zealand	2	3	2	4	1	0	0	12
Philippines	3	6	11	18	0	4	2	44
Africa	9	13	26	23	6	2	13	92
Egypt	5	8	2	2	1	0	2	20
Nigeria	0	0	6	10	2	0	4	22
Country unknown	57	45	39	110	22	24	22	319

See footnotes at end of table.

Table 5. Distribution of non-U.S. citizens awarded science and engineering doctorates by country of citizenship and major field: for selected years--con.

Total, non-science and engineering

Country of citizenship	Year of doctorate 1960-64	1965-69	1970-74	1975-79	1980	1981	1982	Total 1960-82
Total, foreign citizenship ..	1476	3029	5431	6429	1356	1453	1536	20710
Canada	252	606	1113	868	150	129	143	3261
Mexico & Central America	5	29	40	78	14	15	27	208
Mexico	2	9	20	46	10	11	17	115
Cuba & islands	5	51	96	109	21	25	19	326
South America	19	72	203	332	85	85	92	888
Argentina	6	20	41	41	6	3	4	119
Brazil	5	17	28	107	36	42	61	276
Chile	2	8	28	49	14	7	12	120
Columbia	0	6	45	45	7	4	7	114
Europe	180	485	1052	896	150	167	165	3095
Belgium	3	13	28	25	6	6	4	85
England	77	193	370	272	41	46	58	1057
France	8	38	133	115	18	22	20	354
Fed Rep Ger/Ger Dem Rep(1)	30	88	193	149	24	20	16	520
Greece	13	29	39	41	11	12	12	157
Italy	3	16	33	39	4	5	9	109
East Asia	150	321	619	882	196	176	218	2562
China (including Taiwan)(2)	45	98	198	180	39	32	58	650
Hong Kong	1	4	20	51	15	16	13	120
Japan, Okinawa, Ryukyus ..	36	66	83	91	25	17	21	339
Korea	32	90	160	196	34	42	49	603
Thailand	27	31	96	274	67	51	50	596
West Asia	276	600	1012	1098	240	310	305	3839
India	131	260	404	344	50	69	57	1315
Iran	16	26	87	183	69	91	74	546
Iraq	17	22	38	25	5	12	7	126
Israel	26	90	183	186	32	39	40	596
Lebanon	16	27	35	34	5	5	9	129
Turkey	15	20	52	71	15	10	12	195
Pakistan	34	99	80	48	11	7	6	285
Australasia	137	211	610	393	69	100	78	1598
Australia	36	76	181	212	48	53	40	646
Indonesia, Republic of ...	11	12	29	27	8	13	14	114
New Zealand	12	20	52	49	7	7	9	156
Philippines	78	103	145	101	6	24	15	472
Africa	106	250	468	758	218	234	263	2295
Egypt	83	133	120	73	45	37	44	535
Nigeria	0	0	57	320	74	100	109	660
Country unknown	350	404	418	1015	213	212	226	2838

See footnotes at end of table.

Table 5. Distribution of non-U.S. citizens awarded science and engineering doctorates by country of citizenship and major field: for selected years--con.

Total, all fields

Country of citizenship	Year of doctorate 1960-64	1965-69	1970-74	1975-79	1980	1981	1982	Total 1960-82
Total, foreign citizenship ..	7536	14664	24027	24760	4934	5221	5413	86555
Canada	965	1833	2703	1816	300	282	288	8187
Mexico & Central America	90	216	289	423	85	111	115	1329
Mexico	58	138	199	299	67	85	86	932
Cuba & islands	25	158	228	232	42	47	36	768
South America	155	499	1214	1576	348	373	324	4489
Argentina	28	95	249	156	29	29	28	614
Brazil	34	120	283	585	156	176	132	1486
Chile	33	89	183	236	39	41	39	660
Columbia	21	64	188	189	29	23	33	547
Europe	893	1866	3587	2966	501	563	572	10948
Belgium	23	71	157	100	16	26	19	412
England	309	639	1092	801	126	144	146	3257
France	41	124	363	303	32	46	56	965
Fed Rep Ger/Ger Dem Rep(1)	104	248	471	311	51	53	51	1289
Greece	100	199	298	340	72	75	72	1156
Italy	30	71	135	117	19	22	32	426
East Asia	1134	2977	5499	5524	1025	1048	1267	18474
China (including Taiwan)(2)	556	1804	3183	2535	470	483	620	9651
Hong Kong	4	67	260	532	100	109	104	1176
Japan, Okinawa, Ryukyus ..	225	342	584	512	91	92	106	1952
Korea	222	511	866	889	158	171	215	3032
Thailand	81	133	331	729	139	130	140	1683
West Asia	1801	3656	5892	5358	1125	1214	1299	20345
India	1122	2104	3252	2467	420	445	411	10221
Iran	90	218	502	772	273	280	318	2453
Iraq	88	168	191	107	32	39	33	658
Israel	159	378	607	606	95	130	118	2093
Lebanon	46	105	138	139	23	23	30	504
Turkey	57	143	387	435	77	58	80	1237
Pakistan	132	339	347	200	51	32	48	1149
Australasia	411	784	1233	972	186	225	215	4026
Australia	138	260	485	396	92	89	85	1545
Indonesia, Republic of ...	44	95	122	137	28	52	43	521
New Zealand	49	108	164	139	29	20	28	537
Philippines	180	320	457	296	36	61	59	1409
Africa	351	992	1602	1905	526	600	632	6608
Egypt	234	612	512	286	118	114	126	2002
Nigeria	0	0	163	651	158	221	200	1393
Country unknown	1711	1683	1780	3988	796	758	665	11381

(1) Respondents reported that "Germany" was their country of citizenship. Distinguishing between the German Democratic Republic and the Federal Republic of Germany is not possible. Most of the respondents probably are citizens of the Federal Republic of Germany.

(2) Respondents reported that "China" was their country of citizenship. Distinguishing between the People's Republic of China and Taiwan is not possible. Most of the respondents probably are citizens of Taiwan.

SOURCES: National Science Foundation and National Research Council

Table 6. Median lapsed time between receipt of baccalaureate and science and engineering doctoral degrees by field: 1960-82

	Year of doctorate											
Years BA-PhD	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	Total 1960-69	1970	1971
Total, male and female													
Total, sci/eng	7.53	7.58	7.42	7.11	6.96	6.97	6.82	6.82	6.75	6.64	6.97	6.57	6.72
Physical sciences.	6.24	6.37	6.26	6.14	6.04	6.06	5.92	5.89	5.90	5.89	6.02	6.02	6.11
Physics/astron .	6.90	6.98	6.95	6.73	6.54	6.54	6.38	6.41	6.35	6.39	6.51	6.47	6.66
Chemistry	5.87	6.02	5.78	5.75	5.63	5.62	5.53	5.42	5.43	5.44	5.58	5.62	5.67
Earth/env/mar sci.	7.60	7.97	8.13	7.36	7.81	7.60	7.44	7.42	7.[illegible]	7.85	7.65	7.71	7.64
Engineering	7.36	7.12	7.07	6.88	6.97	7.03	6.99	7.16	7.07	7.01	7.05	6.93	7.20
Chemical	6.66	6.17	6.31	6.02	6.14	5.99	5.72	6.04	5.85	5.88	6.03	6.31	6.25
Civil	8.06	7.86	8.25	7.46	7.50	8.52	8.19	7.88	7.64	7.97	7.95	7.24	7.90
Electrical	7.48	6.63	6.90	6.71	6.99	6.84	7.16	7.08	7.11	6.91	6.99	6.72	6.91
Mechanical	7.42	7.77	7.27	7.50	7.10	7.37	7.29	7.45	7.34	7.22	7.33	7.35	7.49
Mathematical sci .	7.24	7.54	7.11	6.79	6.07	6.13	5.80	6.08	5.91	5.88	6.18	6.01	6.29
Life sciences	7.95	7.81	7.70	7.53	7.28	7.32	7.25	7.14	7.02	6.71	7.27	6.47	6.63
Agricultural sci	7.73	7.67	7.54	7.91	7.92	7.48	8.16	8.01	8.30	7.34	7.81	7.19	7.66
Biological sci .	8.05	7.85	7.75	7.43	7.15	7.28	7.04	6.90	6.77	6.54	7.14	6.37	6.46
Social sciences ..	9.51	9.57	9.47	9.31	8.85	8.49	8.32	8.38	8.44	8.19	8.74	8.05	7.98
Psychology	7.93	8.32	8.34	7.12	7.25	7.22	6.91	6.86	6.76	6.47	7.16	6.37	6.31
Total, non-sci/eng(1)	11.16	11.39	11.42	11.71	11.75	11.69	12.04	11.39	11.44	11.10	11.48	10.84	10.79
Total, all fields ...	8.77	8.90	8.83	8.62	8.37	8.24	8.16	8.08	8.11	7.95	8.31	7.88	7.94
Male													
Total, sci/eng	7.44	7.47	7.35	7.05	6.88	6.91	6.76	6.77	6.69	6.58	6.90	6.51	6.65
Physical sciences.	6.24	6.33	6.28	6.14	6.02	6.06	5.92	5.89	5.87	5.87	6.01	5.99	6.09
Physics & astron	6.89	6.95	6.93	6.71	6.52	6.54	6.39	6.41	6.35	6.39	6.51	6.45	6.65
Chemistry	5.86	5.95	5.80	5.73	5.59	5.58	5.51	5.40	5.38	5.41	5.54	5.56	5.64
Earth/env/mar sci.	7.59	7.94	8.02	7.36	7.80	7.61	7.41	7.42	7.36	7.84	7.64	7.69	7.61
Engineering	7.36	7.12	7.05	6.86	6.97	7.02	6.98	7.16	7.07	7.01	7.05	6.92	7.20
Chemical	6.66	6.17	6.30	5.99	6.12	5.99	5.70	6.04	5.83	5.87	6.02	6.31	6.22
Civil	8.00	7.86	8.25	7.46	7.48	8.57	8.19	7.86	7.64	7.97	7.94	7.26	7.89
Electrical	7.50	6.65	6.88	6.70	6.99	6.83	7.16	7.08	7.11	6.90	6.99	6.71	6.89
Mechanical	7.42	7.73	7.27	7.50	7.11	7.37	7.28	7.45	7.34	7.22	7.33	7.35	7.49
Mathematical sci .	7.16	7.47	7.13	6.85	6.03	6.07	5.75	6.02	5.87	5.85	6.14	5.97	6.27
Life sciences	7.87	7.72	7.61	7.49	7.20	7.29	7.23	7.14	7.06	6.69	7.25	6.46	6.55
Agricultural sci	7.70	7.66	7.55	7.85	7.90	7.44	8.18	7.99	8.30	7.31	7.80	7.16	7.63
Biological sci .	7.96	7.74	7.63	7.38	7.04	7.24	6.99	6.85	6.74	6.49	7.09	6.36	6.38
Social sciences ..	9.45	9.45	9.35	9.14	8.78	8.43	8.16	8.20	8.36	8.00	8.60	7.97	7.82
Psychology	7.65	7.99	8.11	6.97	6.91	6.93	6.63	6.62	6.47	6.29	6.90	6.17	6.07
Total, non-sci/eng(1)	10.82	11.02	11.11	11.31	11.35	11.37	11.66	11.08	11.12	10.80	11.14	10.59	10.51
Total, all fields ...	8.54	8.62	8.57	8.35	8.09	8.01	7.91	7.86	7.88	7.71	8.07	7.64	7.71
Female													
Total, sci/eng	9.00	9.67	8.86	8.19	8.25	7.89	7.75	7.61	7.33	7.28	7.89	7.13	7.35
Physical sciences.	6.42	7.63	5.94	6.16	6.44	6.20	5.89	5.93	6.47	6.13	6.21	6.60	6.28
Physics/astron .	*	*	*	*	*	6.50	6.06	6.25	7.50	6.63	6.82	7.22	7.07
Chemistry	6.00	7.38	5.50	5.96	6.23	6.15	5.80	5.74	6.40	5.98	6.06	6.38	6.10
Earth/env/mar sci.	*	*	*	*	*	*	*	*	*	*	8.40	*	*
Engineering	*	*	*	*	*	*	*	*	*	*	7.77	*	*
Chemical	*	*	*	*	*	*	*	*	*	*	*	*	*
Civil	*	*	*	*	*	*	*	*	*	*	*	*	*
Electrical	*	*	*	*	*	*	*	*	*	*	*	*	*
Mechanical	*	*	*	*	*	*	*	*	*	*	*	*	*
Mathematical sci .	*	*	7.00	6.25	6.60	7.38	6.75	7.64	6.45	6.44	6.95	6.75	6.61
Life sciences	8.86	8.67	8.80	8.09	8.19	7.71	7.39	7.19	6.86	6.89	7.47	6.48	7.03
Agricultural sci	*	*	*	*	*	*	*	*	*	*	8.73	9.00	8.38
Biological sci .	8.85	8.71	8.86	7.86	8.18	7.61	7.37	7.14	6.87	6.86	7.44	6.43	6.97
Social sciences ..	10.95	11.18	11.10	12.10	9.75	9.83	10.15	11.00	9.60	10.35	10.55	8.71	9.12
Psychology	9.29	10.45	9.90	8.62	9.50	9.28	8.84	8.23	7.90	7.50	8.60	7.33	7.26
Total, non-sci/eng(1)	15.41	15.36	14.60	14.91	14.65	13.95	14.50	13.63	13.88	13.22	14.17	12.46	12.31
Total, all fields ...	12.13	12.39	11.99	11.76	11.85	11.09	10.83	10.52	10.29	10.16	11.02	9.63	9.77

See footnotes at end of table.

Table 6. Median lapsed time between receipt of baccalaureate and science and engineering doctoral degrees by field: 1960-82--con.

Total, male and female

	Year of doctorate													
Years BA-PhD	1972	1973	1974	1975	1976	1977	1978	1979	Total 1970-79	1980	1981	1982	Total 1980-82	Total 1960-82
Total, sci/eng	7.03	7.21	7.25	7.22	7.27	7.37	7.46	7.47	7.16	7.57	7.63	7.81	7.67	7.19
Physical sciences .	6.31	6.53	6.51	6.52	6.47	6.72	6.72	6.36	6.39	6.45	6.38	6.44	6.42	6.26
Physics/astron .	6.75	7.00	7.16	7.17	6.99	7.31	7.31	7.02	6.94	7.22	6.99	7.35	7.18	6.82
Chemistry	5.93	6.09	6.03	6.11	6.17	6.26	6.35	5.95	5.99	5.99	5.99	5.99	5.99	5.85
Earth/env/mar sci.	7.95	7.74	8.06	7.86	7.70	8.02	7.88	7.59	7.83	8.05	8.27	8.30	8.21	7.84
Engineering	7.46	7.73	7.62	7.53	7.46	7.46	7.50	7.57	7.44	7.63	7.89	7.97	7.83	7.37
Chemical	7.86	8.74	8.77	8.58	8.80	8.38	7.95	8.29	8.24	8.35	8.36	8.45	8.39	8.17
Electrical	7.29	7.46	7.43	7.21	7.28	7.31	7.01	7.64	7.21	7.32	7.51	7.67	7.51	7.17
Mechanical	7.82	8.04	7.87	7.83	7.91	7.92	8.06	7.50	7.77	7.95	7.88	8.16	8.00	7.63
Mathematical sci .	6.72	6.85	7.00	6.94	6.93	6.90	7.18	7.17	6.75	7.08	7.10	7.21	7.13	6.61
Life sciences	6.86	7.05	7.04	7.01	7.12	7.12	7.17	7.18	6.98	7.15	7.14	7.33	7.21	7.10
Agricultural sci	7.66	7.91	7.87	7.96	8.24	7.98	7.92	7.94	7.85	8.02	7.91	8.01	7.98	7.86
Biological sci .	6.69	6.89	6.88	6.79	6.94	6.96	7.00	7.03	6.80	7.00	7.01	7.21	7.08	6.94
Social sciences ..	8.02	8.22	8.35	8.48	8.53	8.79	8.82	9.25	8.43	9.34	9.35	9.63	9.43	8.66
Psychology	6.62	6.66	6.77	6.84	6.91	7.16	7.38	7.69	6.93	7.92	8.36	8.57	8.27	7.24
Total, non-sci/eng(1)	10.66	10.67	10.58	10.86	10.98	11.12	11.27	11.38	10.93	11.90	12.16	12.42	12.17	11.26
Total, all fields ...	8.19	8.40	8.51	8.57	8.64	8.71	8.90	9.04	8.47	9.27	9.40	9.55	9.40	8.58
Male														
Total, sci/eng	6.99	7.20	7.25	7.23	7.25	7.37	7.39	7.38	7.12	7.48	7.51	7.71	7.56	7.12
Physical sciences.	6.31	6.53	6.52	6.54	6.49	6.75	6.75	6.34	6.38	6.52	6.38	6.45	6.45	6.26
Physics/astron .	6.75	7.00	7.14	7.18	7.01	7.32	7.30	7.00	6.93	7.24	6.95	7.34	7.16	6.81
Chemistry	5.89	6.06	6.03	6.12	6.16	6.28	6.36	5.90	5.97	6.05	5.97	5.95	5.99	5.82
Earth/env/mar sci.	7.97	7.80	8.05	7.86	7.69	8.11	7.91	7.67	7.85	8.06	8.36	8.38	8.27	7.85
Engineering	7.46	7.75	7.63	7.53	7.46	7.49	7.50	7.59	7.44	7.65	7.93	8.00	7.86	7.37
Chemical	6.31	6.48	6.47	6.76	6.45	6.66	6.60	5.92	6.41	6.59	6.65	6.96	6.74	6.29
Civil	7.85	8.80	8.77	8.61	8.82	8.44	7.96	8.31	8.26	8.35	8.36	8.42	8.38	8.18
Electrical	7.29	7.46	7.44	7.26	7.31	7.33	7.01	7.64	7.22	7.35	7.51	7.72	7.53	7.18
Mechanical	7.84	8.08	7.88	7.87	7.88	7.95	8.08	7.53	7.79	7.97	7.95	8.18	8.03	7.64
Mathematical sci .	6.70	6.86	7.02	6.91	6.92	6.83	7.18	7.10	6.71	6.96	7.06	7.14	7.05	6.56
Life sciences	6.86	7.03	7.10	7.07	7.14	7.12	7.11	7.17	6.97	7.12	7.13	7.34	7.20	7.09
Agricultural sci	7.62	7.93	7.82	7.99	8.23	7.98	7.89	8.10	7.85	8.11	7.96	8.12	8.07	7.87
Biological sci .	6.68	6.85	6.92	6.82	6.93	6.93	6.89	6.95	6.76	6.91	6.96	7.18	7.02	6.90
Social sciences ..	7.90	8.18	8.30	8.46	8.46	8.71	8.64	8.99	8.32	9.21	9.17	9.47	9.28	8.51
Psychology	6.34	6.47	6.64	6.74	6.82	7.14	7.27	7.49	6.73	7.69	8.18	8.30	8.05	7.00
Total, non-sci/eng(1)	10.40	10.38	10.40	10.64	10.82	10.88	11.00	11.09	10.67	11.46	11.61	11.97	11.69	10.95
Total, all fields ...	8.00	8.20	8.34	8.36	8.37	8.44	8.55	8.62	8.22	8.77	8.82	8.98	8.86	8.26
Female														
Total, sci/eng	7.35	7.28	7.23	7.22	7.41	7.40	7.81	7.90	7.43	7.96	8.07	8.17	8.07	7.66
Physical sciences.	6.46	6.50	6.36	6.26	6.34	6.41	6.48	6.51	6.42	6.05	6.39	6.40	6.29	6.33
Physics/astron .	6.92	7.08	7.60	6.89	6.43	7.19	7.39	7.27	7.14	7.07	7.61	7.50	7.36	7.15
Chemistry	6.35	6.39	5.98	5.98	6.30	6.13	6.21	6.28	6.21	5.72	6.11	6.16	6.01	6.13
Earth/env/mar sci.	7.25	6.80	6.50	8.00	7.88	7.00	7.50	7.06	7.41	8.00	7.63	7.70	7.75	7.59
Engineering	7.50	6.75	7.00	6.79	7.57	6.41	7.40	6.92	7.03	6.58	7.14	7.62	7.28	7.19
Chemical	*	*	*	*	*	*	*	*	6.21	*	*	*	6.07	6.37
Civil	*	*	*	*	*	*	*	*	6.70	*	*	*	9.00	7.58
Electrical	*	*	*	*	*	*	*	*	6.70	*	*	*	6.75	6.81
Mechanical	*	*	*	*	*	*	*	*	6.69	*	*	*	7.00	6.88
Mathematical sci .	6.88	6.65	6.70	7.30	7.03	7.20	7.19	7.44	7.05	8.22	7.40	7.90	7.74	7.16
Life sciences	6.84	7.11	6.81	6.71	7.05	7.09	7.43	7.20	7.01	7.23	7.20	7.31	7.25	7.15
Agricultural sci	9.00	7.38	8.50	7.30	8.42	7.90	8.40	6.55	7.86	7.22	7.58	7.38	7.40	7.75
Biological sci .	6.76	7.10	6.74	6.68	6.98	7.06	7.37	7.25	6.96	7.23	7.17	7.29	7.23	7.12
Social sciences ..	8.83	8.53	8.65	8.55	8.80	9.09	9.44	10.06	9.02	9.68	9.82	10.12	9.87	9.38
Psychology	7.42	7.22	7.07	7.07	7.13	7.18	7.57	7.99	7.35	8.29	8.62	9.01	8.63	7.87
Total, non-sci/eng(1)	11.93	11.58	11.14	11.39	11.37	11.74	11.91	12.06	11.73	12.59	12.94	13.12	12.89	12.41
Total, all fields ...	9.68	9.66	9.41	9.53	9.72	9.74	10.06	10.27	9.79	10.53	10.81	10.93	10.77	10.24

* Asterisks indicates too few cases (under 20 cases) present within a cell to compute a median.

(1) Non-science/engineering doctorates in this table include doctorates whose field of specialization is unknown.

SOURCES: National Science Foundation and National Research Council

Table 7. Field-switching between baccalaureate and doctoral degrees by major field: for selected years(1)

	Field of baccalaureate																
		Physical sciences				Engineering						Life sciences					Total	
Field of doctorate	Total sci & eng	Sub-total	Phys& astr	Chem-istry	Earth & env sci	Sub-total	Chem	Civil	Elec	Mech	Math sci	Sub-total	Agri sci	Bio sci	Soc sci	Psych	non-sci & eng	Total all flds
Year of doctorate - 1960																		
Total, sci/eng	5369	1717	514	1203	197	851	212	80	210	147	290	1256	497	759	537	521	894	6263
Physical sciences.	1511	1353	416	937	1	108	46	0	28	5	28	18	5	13	2	1	97	1608
Physics/astron .	506	422	407	15	1	58	3	0	28	5	24	1	0	1	0	0	24	530
Chemistry	1005	931	9	922	0	50	43	0	0	0	4	17	5	12	2	1	73	1078
Earth/env/mar sci.	239	26	19	7	189	6	1	2	0	1	9	6	2	4	1	2	14	253
Engineering	771	69	34	35	4	684	158	74	176	130	9	4	2	2	1	0	23	794
Chemical	178	23	3	20	0	152	148	0	0	1	2	1	0	1	0	0	3	181
Civil	60	1	0	1	0	59	0	54	1	0	0	0	0	0	0	0	2	62
Electrical	196	16	16	0	0	177	0	0	165	5	3	0	0	0	0	0	5	201
Mechanical	140	4	3	1	0	133	3	12	3	100	2	1	0	1	0	0	4	144
Mathematical sci .	264	30	27	3	0	24	2	3	3	7	207	1	0	1	2	0	27	291
Life sciences	1419	220	13	207	0	8	1	0	2	1	5	1170	455	715	11	5	241	1660
Agricultural sci	382	11	0	11	0	2	0	0	0	0	0	367	310	57	2	0	32	414
Biological sci .	1037	209	13	196	0	6	1	0	2	1	5	803	145	658	9	5	209	1246
Social sciences ..	578	7	2	5	2	18	4	1	1	2	22	38	32	6	480	11	307	885
Psychology	587	12	3	9	1	3	0	0	0	1	10	19	1	18	40	502	185	772
Total, non-sci/eng(2)	521	70	22	48	2	33	5	3	8	6	70	86	28	58	177	83	2949	3470
Total, all fields ..	5890	1787	536	1251	199	884	217	83	218	153	360	1342	525	817	714	604	3843	9733
Year of doctorate - 1965																		
Total, sci/eng	9223	2644	971	1673	313	2301	456	294	584	437	639	1897	756	1141	757	672	1253	10476
Physical sciences.	2381	2072	801	1271	3	223	62	5	64	19	44	36	21	15	2	1	109	2490
Physics/astron .	1013	811	797	14	2	162	9	5	63	19	35	2	0	2	1	0	33	1046
Chemistry	1368	1261	4	1257	1	61	53	0	1	0	9	34	21	13	1	1	76	1444
Earth/env/mar sci.	363	24	16	8	284	29	4	5	8	1	11	12	4	8	3	0	12	375
Engineering	2023	95	56	39	8	1881	369	276	470	386	31	5	4	1	1	2	51	2074
Chemical	367	24	0	24	2	339	332	0	0	1	2	0	0	0	0	0	2	369
Civil	199	5	4	1	0	191	1	171	0	3	3	0	0	0	0	0	10	209
Electrical	488	16	16	0	0	463	0	0	425	8	8	1	1	0	0	0	10	498
Mechanical	418	8	8	0	0	400	3	59	6	290	7	2	1	1	0	1	8	426
Mathematical sci .	638	53	47	6	2	82	6	3	27	15	484	7	2	5	4	6	47	685
Life sciences	2169	372	40	332	5	21	7	0	3	0	25	1731	657	1074	7	8	370	2539
Agricultural sci	527	11	0	11	1	7	1	0	0	0	0	504	451	53	3	1	49	576
Biological sci .	1642	361	40	321	4	14	6	0	3	0	25	1227	206	1021	4	7	321	1963
Social sciences ..	911	16	7	9	9	45	6	3	8	11	27	79	66	13	706	29	448	1359
Psychology	738	12	4	8	2	20	2	2	4	5	17	27	2	25	34	626	216	954
Total, non-sci/eng(2)	979	122	46	76	12	75	7	7	9	14	120	161	39	122	304	185	4885	5864
Total, all fields ..	10202	2766	1017	1749	325	2376	463	301	593	451	759	2058	795	1263	1061	857	6138	16340
Year of doctorate - 1970																		
Total, sci/eng	15513	4282	1693	2589	340	3624	603	424	1052	682	1362	3071	970	2101	1435	1399	2230	17743
Physical sciences.	3675	3252	1293	1959	3	287	86	5	80	28	91	41	15	26	1	0	218	3893
Physics/astron .	1554	1289	1272	17	1	195	6	4	78	28	69	0	0	0	0	0	101	1655
Chemistry	2121	1963	21	1942	2	92	80	1	2	0	22	41	15	26	1	0	117	2238
Earth/env/mar sci.	467	74	53	21	292	51	4	10	8	5	15	26	8	18	8	1	43	510
Engineering	3318	203	163	40	12	3013	477	390	859	620	74	10	5	5	5	1	116	3434
Chemical	441	11	2	9	2	425	409	0	1	9	3	0	0	0	0	0	4	445
Civil	297	5	4	1	0	286	3	250	0	10	5	0	0	0	1	0	14	311
Electrical	835	51	48	3	0	766	3	1	716	6	16	0	0	0	1	1	22	857
Mechanical	612	18	18	0	2	577	9	53	9	427	13	1	0	1	1	0	23	635
Mathematical sci .	1139	77	68	9	1	124	8	9	63	9	924	5	1	4	6	2	86	1225
Life sciences	3608	609	80	529	11	62	15	0	24	4	59	2824	836	1988	13	30	557	4165
Agricultural sci	741	24	3	21	4	10	4	0	0	1	4	697	591	106	2	0	63	804
Biological sci .	2867	585	77	508	7	52	11	0	24	3	55	2127	245	1882	11	30	494	3361
Social sciences ..	1789	40	27	13	19	60	6	6	11	10	153	128	102	26	1340	49	837	2626
Psychology	1517	27	9	18	2	27	5	4	7	6	46	37	3	34	62	1316	373	1890
Total, non-sci/eng(2)	2332	249	83	166	31	199	20	16	51	45	318	421	95	326	618	496	9423	11755
Total, all fields ..	17845	4531	1776	2755	371	3823	623	440	1103	727	1680	3492	1065	2427	2053	1895	11653	29498

See footnotes at end of table.

Table 7. Field-switching between baccalaureate and doctoral degrees by major field: for selected years(1)--con.

Field of baccalaureate

Field of doctorate	Total sci & eng	Physical sciences: Sub-total	Physical sciences: Phys& astr	Physical sciences: Chem-istry	Earth & env sci	Engineering: Sub-total	Engineering: Chem	Engineering: Civil	Engineering: Elec	Engineering: Mech	Math sci	Life sciences: Sub-total	Life sciences: Agri sci	Life sciences: Bio sci	Soc sci	Psych	Total non-sci & eng	Total all flds
Year of doctorate - 1975																		
Total, sci/eng	15774	3723	1476	2247	348	2948	440	337	838	564	1310	3333	907	2426	2089	2023	2584	18358
Physical sciences.	2878	2636	1068	1568	3	137	36	1	43	11	66	32	5	27	2	2	198	3076
Physics/astron .	1235	1067	1053	14	3	102	5	1	43	11	60	1	0	1	1	1	65	1300
Chemistry	1643	1569	15	1554	0	35	31	0	0	0	6	31	5	26	1	1	133	1776
Earth/env/mar sci.	597	125	69	56	310	66	10	9	11	12	24	66	10	56	6	0	37	634
Engineering	2852	212	177	35	11	2486	368	312	696	501	102	27	16	11	10	4	150	3002
Chemical	352	14	0	14	0	335	318	0	0	6	3	0	0	0	0	0	18	370
Civil	273	7	7	0	3	248	3	198	1	13	10	3	3	0	2	0	17	290
Electrical	588	30	30	0	0	545	0	0	517	5	13	0	0	0	0	0	24	612
Mechanical	472	18	17	1	0	447	5	41	5	331	7	0	0	0	0	0	15	487
Mathematical sci .	1042	54	47	7	0	92	2	3	45	15	883	2	1	1	7	4	105	1147
Life sciences	3885	633	80	553	14	65	15	4	13	11	54	3046	801	2245	27	46	517	4402
Agricultural sci	843	36	4	32	4	18	2	1	2	3	7	770	629	141	6	2	62	905
Biological sci .	3042	597	76	521	10	47	13	3	11	8	47	2276	172	2104	21	44	455	3497
Social sciences ..	2325	34	21	13	9	66	5	4	16	8	127	100	72	28	1914	75	1021	3346
Psychology	2195	29	14	15	1	36	4	4	14	6	54	60	2	58	123	1892	556	2751
Total, non-sci/eng(2)	2982	264	101	163	28	259	18	28	66	55	391	426	74	352	912	702	11611	14593
Total, all fields ..	18756	3987	1577	2410	376	3207	458	365	904	619	1701	3759	981	2778	3001	2725	14195	32951
Year of doctorate - 1980																		
Total, sci/eng	14638	3249	1264	1985	354	2183	323	256	580	414	1179	3565	692	2873	1868	2240	2559	17197
Physical sciences.	2341	2149	812	1337	3	91	29	1	24	5	42	51	5	46	2	3	180	2521
Physics/astron .	917	810	797	13	2	65	4	1	24	5	33	3	0	3	2	2	66	983
Chemistry	1424	1339	15	1324	1	26	25	0	0	0	9	48	5	43	0	1	114	1538
Earth/env/mar sci.	582	137	100	37	293	39	2	4	4	8	35	68	8	60	9	1	46	628
Engineering	2314	257	199	58	12	1865	277	239	495	381	124	36	16	20	11	9	165	2479
Chemical	271	27	4	23	0	242	231	1	0	3	0	2	1	1	0	0	14	285
Civil	221	4	3	1	4	203	0	176	1	9	5	4	2	2	1	0	19	240
Electrical	450	38	37	1	0	388	0	0	360	2	24	0	0	0	0	0	28	478
Mechanical	363	15	15	0	4	330	7	20	2	261	14	0	0	0	0	0	21	384
Mathematical sci .	862	45	41	4	1	61	2	3	33	5	730	6	1	5	16	3	100	962
Life sciences	4197	618	90	528	29	50	10	4	8	3	77	3282	619	2663	44	97	518	4715
Agricultural sci	815	44	3	41	11	17	4	2	1	0	8	710	500	210	19	6	97	912
Biological sci .	3382	574	87	487	18	33	6	2	7	3	69	2572	119	2453	25	91	421	3803
Social sciences ..	1991	16	10	6	13	55	2	4	10	8	127	67	41	26	1648	65	803	2794
Psychology	2351	27	12	15	3	22	1	1	6	4	44	55	2	53	138	2062	747	3098
Total, non-sci/eng(2)	3016	223	81	142	25	195	14	21	37	41	318	450	55	395	947	858	10800	13816
Total, all fields ..	17654	3472	1345	2127	379	2378	337	277	617	455	1497	4015	747	3268	2815	3098	13359	31013
Year of doctorate - 1982																		
Total, sci/eng	14893	3338	1275	2063	402	2216	315	309	619	402	1112	3786	753	3033	1789	2250	2721	17614
Physical sciences.	2507	2281	820	1461	5	87	15	1	30	7	59	66	5	61	3	6	184	2691
Physics/astron .	941	821	806	15	4	67	0	1	30	7	45	1	0	1	2	1	72	1013
Chemistry	1566	1460	14	1446	1	20	15	0	0	0	14	65	5	60	1	5	112	1678
Earth/env/mar sci.	608	111	67	44	331	34	3	9	4	5	23	89	9	80	18	2	49	657
Engineering	2400	303	234	69	21	1915	275	284	515	374	100	40	13	27	13	8	244	2644
Chemical	281	26	2	24	0	250	238	1	0	3	0	4	1	3	1	0	25	306
Civil	279	2	0	2	7	261	2	204	2	12	4	3	2	1	1	1	29	308
Electrical	497	60	57	3	2	419	1	0	389	5	16	0	0	0	0	0	45	542
Mechanical	396	22	22	0	1	355	2	24	4	265	14	3	0	3	1	0	40	436
Mathematical sci .	855	60	52	8	0	69	2	3	43	5	710	8	2	6	7	1	85	940
Life sciences	4283	533	73	460	34	48	15	3	9	4	73	3452	676	2776	57	86	557	4840
Agricultural sci	869	34	2	32	10	16	5	0	2	1	7	771	526	245	20	11	82	951
Biological sci .	3414	499	71	428	24	32	10	3	7	3	66	2681	150	2531	37	75	475	3889
Social sciences ..	1900	29	19	10	10	50	5	9	13	5	111	80	48	32	1561	59	788	2688
Psychology	2340	21	10	11	1	13	0	0	5	2	36	51	0	51	130	2088	814	3154
Total, non-sci/eng(2)	2920	194	66	128	16	184	11	20	44	32	282	434	53	381	978	832	10914	13434
Total, all fields ..	17813	3532	1341	2191	418	2400	326	329	663	434	1394	4220	806	3414	2767	3082	13235	31048

(1) Only doctorates whose baccalaureate-granting institution is known are included in this table.

(2) Non-science/engineering doctorates in this table include doctorates whose field of specialization is unknown.

SOURCES: National Science Foundation and National Research Council

Table 8. Distribution of new science and engineering doctorates by state of doctorate-granting institution, by major field, and sex: 1960-82

Total, male and female

Field of study

State of PhD inst	Total sci & eng	Physical sciences			Earth & env sci	Engineering					Math sci	Life sciences			Soc sci	Psych	Total non-sci & eng(1)	Total all flds
		Sub-total	Phys& astr	Chem-istry		Sub-total	Chem	Civil	Elec	Mech		Sub-total	Agri sci	Bio-logy				
Total, all states	336660	64279	26664	37615	11565	57059	7411	5837	13119	9938	20509	83168	16734	66434	53359	46721	239746	576406
Alabama	1819	266	109	157	0	284	22	6	114	90	182	687	189	498	82	318	2434	4253
Alaska	104	22	21	1	53	3	0	1	0	0	0	26	3	23	0	0	1	105
Arizona	3737	705	339	366	306	598	23	63	189	98	118	987	267	720	415	608	2784	6521
Arkansas	832	224	39	185	0	109	11	5	22	17	31	260	90	170	100	108	1220	2052
California	42138	7576	3728	3848	1855	8876	612	922	2476	1353	2872	9119	797	8322	6345	5495	20734	62872
Colorado	5926	989	507	482	437	1057	127	366	185	83	311	1410	392	1018	910	792	5964	11890
Connecticut	5814	1324	674	650	165	594	89	31	128	142	374	1361	97	1264	1301	695	4509	10323
Delaware	1068	350	83	267	45	286	155	16	28	54	58	161	19	142	28	140	249	1317
Florida	6435	1191	415	776	277	777	85	52	169	125	333	1682	426	1256	857	1318	9300	15735
Georgia	4426	771	173	598	44	692	79	61	114	146	207	1278	289	989	503	931	3613	8039
Hawaii	1361	154	40	114	103	49	0	1	32	0	6	486	140	346	410	153	202	1563
Idaho	561	102	25	77	50	66	30	9	10	2	43	240	111	129	55	5	331	892
Illinois	22220	4309	1614	2695	508	4274	486	789	916	779	1353	4584	752	3832	4229	2963	14365	36585
Indiana	12105	2469	795	1674	199	2321	226	289	542	560	738	2966	641	2325	2057	1355	10297	22402
Iowa	7243	1486	430	1056	147	1351	196	96	292	205	460	2162	788	1374	1041	596	4447	11690
Kansas	4413	879	188	691	87	507	107	16	119	117	157	1598	412	1186	496	689	2517	6930
Kentucky	1969	316	85	231	8	163	51	15	9	34	122	652	219	433	378	330	1148	3117
Louisiana	3532	651	202	449	124	309	168	25	18	71	277	1266	361	905	544	361	2909	6441
Maine	282	50	19	31	13	30	26	2	0	0	0	115	50	65	0	74	171	453
Maryland	6603	1537	923	614	201	1003	142	34	310	163	445	1813	278	1535	922	682	4059	10662
Massachusetts	20825	5028	2441	2587	780	4097	434	336	861	635	1458	3245	227	3018	4203	2014	13549	34374
Michigan	15408	2352	722	1630	423	2436	292	193	457	493	851	4041	1265	2776	2809	2496	12675	28083
Minnesota	6273	767	257	510	93	967	244	63	220	240	290	2093	709	1384	1080	983	4073	10346
Mississippi	1631	178	13	165	3	137	8	14	49	11	20	687	191	496	175	431	2163	3794
Missouri	6349	928	426	502	250	1129	196	89	318	144	370	1593	391	1202	1031	1048	5026	11375
Montana	786	105	25	80	43	103	46	9	40	7	58	291	86	205	69	137	325	1111
Nebraska	1965	360	85	275	30	94	11	0	21	34	87	776	340	436	333	285	1979	3944
Nevada	241	58	27	31	46	2	0	0	2	0	0	31	0	31	4	100	86	327
New Hampshire	953	300	105	195	28	73	7	3	6	16	90	331	30	301	41	90	36	989
New Jersey	7630	1871	878	993	276	1385	360	108	308	199	685	1711	344	1367	1113	589	4168	11798
New Mexico	1448	328	180	148	105	343	12	59	144	65	191	202	37	165	100	179	1417	2865
New York	37255	7121	3461	3660	841	5524	750	360	1402	895	2341	7726	1052	6674	6759	6943	27481	64736
North Carolina	8264	1234	454	780	149	941	80	118	182	190	468	2941	657	2284	1607	924	4819	13083
North Dakota	785	165	4	161	34	0	0	0	0	0	0	427	137	290	0	159	505	1290
Ohio	13142	2980	994	1986	339	2648	272	130	538	384	650	2685	463	2222	1515	2325	11217	24359
Oklahoma	4280	479	204	275	156	1118	221	157	137	207	181	1226	286	940	602	518	3633	7913
Oregon	4634	655	202	453	273	257	44	28	52	44	317	1693	560	1133	792	647	3244	7878
Pennsylvania	16987	3670	1527	2143	611	3800	551	346	954	642	1049	3322	336	2986	2664	1871	13207	30194
Rhode Island	2677	675	294	381	249	380	20	4	86	128	327	423	26	397	391	232	851	3528
South Carolina	1509	400	123	277	78	202	43	13	36	35	104	399	41	358	99	227	985	2494
South Dakota	379	24	0	24	13	15	0	3	6	0	0	176	86	90	33	118	397	776
Tennessee	4641	783	358	425	42	612	105	38	117	99	209	1253	163	1090	576	1166	4181	8822
Texas	14354	2611	1145	1466	780	2946	437	462	703	497	910	3567	691	2876	1494	2046	10764	25118
Utah	3831	652	222	430	179	727	96	103	124	62	144	1070	232	838	307	752	3180	7011
Vermont	418	119	26	93	0	22	0	0	11	10	6	169	13	156	1	101	80	498
Virginia	4307	822	438	384	136	1006	85	93	131	286	281	1248	295	953	492	322	2753	7060
Washington	6391	1076	424	652	399	769	124	110	138	109	361	1929	578	1351	1182	675	3181	9572
West Virginia	1105	151	49	102	36	198	37	51	20	48	1	457	73	384	87	175	748	1853
Wisconsin	10105	1850	581	1269	418	1308	263	123	257	304	729	3328	1000	2328	1789	683	6382	16487
Wyoming	682	156	84	72	83	50	3	8	14	8	39	246	102	144	12	96	537	1219
District of Columbia	4774	974	506	468	30	421	5	17	92	105	205	1027	2	1025	1341	776	4801	9575
Puerto Rico	43	36	0	36	0	0	0	0	0	0	0	2	0	2	5	0	49	92

See footnotes at end of table.

Table 8. Distribution of new science and engineering doctorates by state of doctorate-granting institution, by major field, and sex: 1960-82--con.

Male

Field of study

State of PhD inst	Total sci & eng	Physical sciences			Earth & env sci	Engineering					Math sci	Life sciences			Soc sci	Psych	Total non-sci & eng(1)	Total all flds
		Sub-total	Phys& astr	Chem-istry		Sub-total	Chem	Civil	Elec	Mech		Sub-total	Agri sci	Bio-logy				
Total, all states	289870	59680	25653	34027	10888	56243	7300	5772	12990	9859	18646	68600	15823	52777	43974	31839	171833	461703
Alabama	1576	249	106	143	0	278	21	6	114	86	155	588	183	405	68	238	1638	3214
Alaska	99	22	21	1	50	3	0	1	0	0	0	24	3	21	0	0	0	99
Arizona	3278	672	328	344	295	589	22	61	189	97	113	853	255	598	323	433	1969	5247
Arkansas	733	212	38	174	0	105	11	5	22	17	30	222	84	138	89	75	980	1713
California	36248	7038	3585	3453	1713	8722	598	911	2441	1341	2652	7384	760	6624	5132	3607	14883	51131
Colorado	5226	941	493	448	440	1049	127	364	183	85	285	1220	376	844	735	556	4506	9732
Connecticut	4860	1212	642	570	154	587	86	31	128	141	340	1006	89	917	1065	496	3275	8135
Delaware	955	328	77	251	41	279	152	15	28	54	54	132	19	113	22	99	167	1122
Florida	5566	1111	403	708	258	766	83	51	169	125	292	1466	398	1068	728	945	6296	11862
Georgia	3734	724	169	555	40	690	79	61	114	146	181	1075	271	804	414	610	2472	6206
Hawaii	1137	142	35	107	98	48	0	1	31	0	6	410	126	284	332	101	139	1276
Idaho	524	99	25	74	66	65	30	9	9	2	40	223	107	116	46	5	255	779
Illinois	19179	3965	1556	2409	482	4210	482	782	910	767	1232	3726	708	3018	3507	2057	10619	29798
Indiana	10841	2330	770	1560	194	2289	222	285	535	558	691	2538	616	1922	1762	1037	7711	18552
Iowa	6679	1415	421	994	143	1336	190	94	291	205	425	1945	754	1191	947	468	3442	10121
Kansas	3847	823	183	640	82	502	106	16	117	115	141	1394	379	1015	422	483	1776	5623
Kentucky	1709	295	81	214	7	161	51	15	9	33	111	540	193	347	341	254	850	2559
Louisiana	3079	589	194	395	118	307	167	25	18	71	252	1080	343	737	468	265	2213	5292
Maine	252	47	18	29	10	30	26	2	0	0	0	101	48	53	0	64	141	393
Maryland	5591	1404	882	522	181	981	142	34	304	160	414	1450	254	1196	750	411	2629	8220
Massachusetts	17686	4614	2338	2276	728	4020	453	328	855	629	1325	2336	194	2142	3386	1277	9502	27188
Michigan	13345	2191	695	1496	392	2414	287	191	457	491	752	3456	1207	2249	2337	1773	9463	22808
Minnesota	5436	695	248	447	92	954	239	63	216	239	267	1836	678	1158	931	661	3102	8538
Mississippi	1447	170	13	157	3	134	8	14	47	11	18	614	179	435	151	357	1596	3043
Missouri	5471	861	412	449	243	1109	195	88	311	142	323	1347	368	979	843	745	3742	9213
Montana	725	100	23	77	61	103	46	9	40	7	51	272	84	188	49	109	281	1006
Nebraska	1749	338	85	253	29	89	10	0	19	33	80	702	324	378	295	216	1576	3325
Nevada	200	56	27	29	45	2	0	0	2	0	0	26	0	26	3	68	50	250
New Hampshire	827	271	101	170	26	72	6	3	6	16	81	279	29	250	31	67	24	851
New Jersey	6709	1758	853	905	263	1363	354	104	305	197	621	1359	321	1038	931	414	3085	9794
New Mexico	1289	308	174	134	102	340	12	59	141	45	177	162	34	128	71	129	998	2287
New York	30189	6564	3305	3259	795	5451	740	357	1385	[illegible]	2064	5942	989	4953	5297	4076	18282	48471
North Carolina	7045	1132	437	695	143	920	78	115	180	189	427	2442	633	1809	1356	625	3434	10479
North Dakota	720	158	4	154	34	0	0	0	0	0	0	402	133	269	0	126	420	1140
Ohio	11325	2763	952	1811	327	2617	267	130	535	384	552	2206	443	1763	1223	1607	8075	19400
Oklahoma	3901	460	198	262	148	1099	218	153	133	206	165	1084	278	806	541	404	2699	6600
Oregon	4086	616	193	423	253	256	44	28	52	44	293	1510	531	979	700	458	2510	6596
Pennsylvania	14636	3361	1464	1897	577	3763	542	345	952	638	948	2582	313	2269	2174	1231	9236	23872
Rhode Island	2325	621	284	337	225	375	20	4	83	127	308	323	23	300	313	160	549	2874
South Carolina	1315	371	117	254	72	200	42	13	36	35	91	338	40	298	82	161	646	1961
South Dakota	344	24	0	24	13	15	0	3	6	0	0	168	84	84	30	94	328	672
Tennessee	3967	744	346	398	40	602	105	38	117	97	187	1005	148	857	516	873	2861	6828
Texas	12520	2428	1105	1323	737	2909	432	459	696	494	816	2922	657	2265	1193	1515	7315	19835
Utah	3503	628	219	409	174	715	95	100	123	61	141	971	219	752	274	600	2524	6027
Vermont	357	114	25	89	0	21	0	0	11	9	5	145	13	132	0	72	43	400
Virginia	3831	762	421	341	125	988	82	92	131	284	259	1034	278	756	447	216	1934	5765
Washington	5605	1012	410	602	379	764	124	110	158	108	334	1662	555	1107	986	468	2433	8038
West Virginia	975	145	48	97	32	197	37	51	20	47	1	389	67	322	84	127	546	1521
Wisconsin	8923	1754	565	1189	391	1293	262	121	256	302	677	2804	934	1870	1536	468	4750	13673
Wyoming	626	151	83	68	80	49	3	3	14	8	34	229	99	130	11	72	466	1092
District of Columbia	3652	866	481	385	27	412	4	17	91	103	175	675	2	673	1031	466	3382	7034
Puerto Rico	28	26	0	26	0	0	0	0	0	0	0	1	0	1	1	0	20	48

See footnotes at end of table.

Table 8. Distribution of new science and engineering doctorates by state of doctorate-granting institution, by major field, and sex: 1960-82--con.

Female

State of PhD inst	Total sci & eng	Physical sciences Sub-total	Physical sciences Phys& astr	Physical sciences Chem-istry	Earth & env sci	Engineering Sub-total	Engineering Chem	Engineering Civil	Engineering Elec	Engineering Mech	Math sci	Life sciences Sub-total	Life sciences Agri sci	Life sciences Bio-logy	Soc sci	Psych	Total non-sci & eng(1)	Total all flds
Total, all states	46790	4599	1011	3588	677	816	111	65	129	79	1863	14568	911	13657	9385	14882	67913	114703
Alabama	243	17	3	14	0	6	1	0	0	4	27	99	6	93	14	80	796	1039
Alaska	5	0	0	0	3	0	0	0	0	0	0	2	0	2	0	0	1	6
Arizona	459	33	11	22	11	9	1	2	0	1	5	134	12	122	92	175	815	1274
Arkansas	99	12	1	11	0	4	0	0	0	0	1	38	6	32	11	33	240	339
California	5890	538	143	395	142	154	14	11	35	12	220	1735	37	1698	1213	1888	5851	11741
Colorado	700	48	14	34	17	8	0	2	2	0	26	190	16	174	175	236	1458	2158
Connecticut	954	112	32	80	11	7	3	0	0	1	34	355	8	347	236	199	1234	2188
Delaware	113	22	6	16	4	7	3	1	0	0	4	29	0	29	6	41	82	195
Florida	869	80	12	68	19	11	2	1	0	0	41	216	28	188	129	373	3004	3873
Georgia	692	47	4	43	4	2	0	0	0	0	26	203	18	185	89	321	1141	1833
Hawaii	224	12	5	7	5	1	0	0	1	0	0	76	14	62	78	52	63	287
Idaho	37	3	0	3	4	1	0	0	1	0	3	17	4	13	9	0	76	113
Illinois	3041	344	58	286	26	64	4	7	6	12	121	858	44	814	722	906	3746	6787
Indiana	1264	139	25	114	5	32	4	4	7	2	47	428	25	403	295	318	2586	3850
Iowa	564	71	9	62	4	15	6	2	1	0	35	217	34	183	94	128	1005	1569
Kansas	566	56	5	51	5	5	1	0	2	2	16	204	33	171	74	206	741	1307
Kentucky	260	21	4	17	1	2	0	0	0	1	11	112	26	86	37	76	298	558
Louisiana	453	62	8	54	6	2	1	0	0	0	25	186	18	168	76	96	696	1149
Maine	30	3	1	2	3	0	0	0	0	0	0	14	2	12	0	10	30	60
Maryland	1012	133	41	92	20	22	0	0	6	3	31	363	24	339	172	271	1430	2442
Massachusetts	3139	414	103	311	52	77	11	8	6	6	133	909	33	876	817	737	4047	7186
Michigan	2063	161	27	134	31	22	5	2	0	2	69	585	58	527	472	723	3212	5275
Minnesota	837	72	9	63	1	13	5	0	4	1	23	257	31	226	149	322	971	1808
Mississippi	184	8	0	8	0	3	0	0	2	0	2	73	12	61	24	74	567	751
Missouri	878	67	14	53	7	20	1	1	7	2	47	246	23	223	188	303	1284	2162
Montana	61	5	2	3	2	0	0	0	0	0	7	19	2	17	0	28	44	105
Nebraska	216	22	0	22	1	5	1	0	2	1	7	74	16	58	38	69	403	619
Nevada	41	2	0	2	1	0	0	0	0	0	0	5	0	5	1	32	36	77
New Hampshire	126	29	4	25	2	1	1	0	0	0	9	52	1	51	10	23	12	138
New Jersey	921	113	25	88	13	22	6	4	3	2	64	352	23	329	182	175	1083	2004
New Mexico	159	20	6	14	3	3	0	0	3	0	14	40	3	37	29	50	419	578
New York	7066	557	156	401	46	73	10	3	17	5	277	1784	63	1721	1462	2867	9199	16265
North Carolina	1219	102	17	85	6	21	2	3	2	1	41	499	24	475	251	299	1385	2604
North Dakota	65	7	0	7	0	0	0	0	0	0	0	25	4	21	0	33	85	150
Ohio	1817	217	42	175	12	31	5	0	3	0	68	479	20	459	292	718	3142	4959
Oklahoma	379	19	6	13	8	19	3	4	4	1	16	142	8	134	61	114	934	1313
Oregon	548	39	9	30	20	1	0	0	0	0	24	183	29	154	92	189	734	1282
Pennsylvania	2351	309	63	246	34	37	9	1	2	4	101	740	23	717	490	640	3971	6322
Rhode Island	352	54	10	44	24	5	0	0	3	1	19	100	3	97	78	72	302	654
South Carolina	194	29	6	23	6	2	1	0	0	0	13	61	1	60	17	66	339	533
South Dakota	35	0	0	0	0	0	0	0	0	0	0	8	2	6	3	24	69	104
Tennessee	674	39	12	27	2	10	0	0	0	2	22	248	15	233	60	293	1320	1994
Texas	1834	183	40	143	43	37	5	3	7	3	94	645	34	611	301	531	3449	5283
Utah	328	24	3	21	5	12	1	3	1	1	3	99	13	86	33	152	656	984
Vermont	61	5	1	4	0	1	0	0	0	1	1	24	0	24	1	29	37	98
Virginia	476	60	17	43	11	18	3	1	0	2	22	214	17	197	45	106	819	1295
Washington	786	64	14	50	20	5	0	0	0	1	27	267	23	244	196	207	748	1534
West Virginia	130	6	1	5	4	1	0	0	0	1	0	68	6	62	3	68	202	332
Wisconsin	1182	96	16	80	27	15	1	2	1	2	52	524	66	458	253	215	1632	2814
Wyoming	56	5	1	4	3	1	0	0	0	0	5	17	3	14	1	24	71	127
District of Columbia	1122	108	25	83	3	9	1	0	1	2	30	352	0	352	310	310	1419	2541
Puerto Rico	15	10	0	10	0	0	0	0	0	0	0	1	0	1	4	0	29	44

(1) Non-science/engineering doctorates in this table include doctorates whose field of specialization is unknown.

SOURCES: National Science Foundation and National Research Council

Table 9. Distribution of science and engineering doctorates conferred at top 100 doctorate-producing institutions(1)
by major field and sex: 1960-82

Total, male and female

Doctorate-producing institution	Total sci & eng	Physical sciences: Sub-total	Physical sciences: Phys& astr	Physical sciences: Chem-istry	Earth & env sci	Engineering: Sub-total	Engineering: Chem	Engineering: Civil	Engineering: Elec	Engineering: Mech	Math sci	Life sciences: Sub-total	Life sciences: Agri sci	Life sciences: Bio-logy	Soc sci	Psych	Total non-sci & eng(2)	Total all flds
Univ of Cal, Berkeley	11052	2203	1092	1111	314	2677	265	515	539	477	1006	2237	241	1996	2022	593	4432	15484
U of Illinois, Urbana	9382	2029	780	1249	255	2441	209	532	644	427	565	2228	751	1477	1186	678	4794	14176
Univ of Wis, Madison.	9205	1579	536	1043	415	1175	234	123	222	299	679	3087	998	2089	1695	575	5866	15071
Mass Inst of Tech ...	7837	1967	996	971	437	3361	353	291	705	513	594	579	40	539	822	77	376	8213
Univ of Michigan	7472	1002	423	579	310	1625	209	116	306	282	475	1394	184	1210	1459	1207	5512	12984
Purdue University ...	7171	1340	355	985	70	2036	166	268	500	482	393	1882	640	1242	658	792	1692	8863
Stanford University .	6951	1048	634	414	443	2738	120	227	971	416	667	663	6	657	936	456	3160	10111
Cornell University ..	6856	1348	748	600	95	1159	89	156	261	167	398	2254	913	1341	1249	353	2055	8911
Ohio State University	6446	1151	400	751	214	1217	113	82	327	162	278	1719	463	1256	956	913	5351	11797
Univ of Minnesota ...	6273	767	257	510	93	967	244	63	220	240	290	2093	709	1384	1080	983	4073	10346
Harvard University ..	6208	1440	858	582	248	246	0	8	18	40	567	1147	2	1145	2034	526	5788	11996
Univ of Cal, L.A	5969	916	445	471	365	1147	43	30	244	138	439	1298	18	1280	1197	627	3769	9738
Michigan State Univ .	5813	812	210	602	103	563	32	61	126	127	250	2251	1081	1170	1076	758	4663	10476
Columbia University .	5812	1045	564	481	337	772	119	36	172	175	277	621	0	621	1812	948	4712	10524
Univ of Texas, Austin	5078	1024	485	539	197	1091	141	209	243	208	333	853	1	852	807	773	3513	8591
University of Chicago	4818	999	529	470	167	0	0	0	0	0	364	932	0	932	1757	599	3129	7947
New York University .	4729	554	300	254	116	544	78	44	135	43	527	727	4	723	1066	1195	5621	10350
Iowa State University	4646	964	289	675	52	986	152	58	218	90	261	1596	788	808	629	158	623	5269
Univ of Washington ..	4528	828	323	505	364	679	118	104	153	89	261	1232	297	935	735	429	2340	6868
Penn State University	4485	968	401	567	463	830	91	64	105	153	221	1035	336	699	508	460	3036	7521
Univ of Pennsylvania.	4270	824	351	473	17	903	129	37	322	107	246	824	0	824	1143	313	2901	7171
Northwestern Univ ...	3903	680	174	506	79	1216	174	215	145	194	236	452	0	452	785	655	2696	6599
Yale University	3895	954	535	419	145	309	67	2	79	52	292	856	80	776	997	342	2959	6854
U of Md, College Park	3778	1006	653	353	44	545	111	32	151	89	309	894	278	616	470	510	2465	6243
Princeton University.	3465	989	576	413	186	776	253	67	179	76	394	221	0	221	722	177	1446	4911
Indiana University ..	3368	673	254	419	126	3	0	0	0	0	183	869	0	869	1104	610	6851	10219
University of Florida	3355	618	186	432	20	733	85	47	161	102	107	976	420	556	477	424	2009	5364
Rutgers St U of N.J..	3295	551	186	365	90	338	25	34	46	65	217	1368	344	1024	384	347	2229	5524
Univ of Cal, Davis ..	3289	436	135	301	53	341	23	62	34	61	57	2087	319	1768	246	69	287	3576
Texas A & M Univ	3198	467	147	320	276	690	67	170	67	79	128	1291	658	633	285	61	996	4194
Univ of Colorado	3000	735	415	320	170	341	51	92	97	31	172	453	0	453	692	437	1854	4854
U of NC Chapel Hill .	2894	560	158	402	118	54	1	0	0	0	212	716	0	716	800	434	2487	5381
Case Western Reserve.	2884	756	300	456	42	864	70	23	115	125	221	399	0	399	226	376	1392	4276
Univ of Pittsburgh ..	2861	665	274	391	61	447	85	35	140	85	141	577	0	577	603	367	3562	6423
Univ of Southern Cal.	2731	324	108	216	73	732	31	33	342	54	108	452	0	452	609	433	5165	7896
University of Kansas.	2724	580	117	463	86	289	59	13	94	44	91	738	1	737	354	586	1806	4530
U of Missouri, Colum.	2719	264	107	157	77	390	46	27	158	38	86	963	391	572	529	410	2223	4942
University of Arizona	2709	500	276	224	282	378	18	54	114	53	73	820	267	553	349	307	1082	3791
Johns Hopkins Univ ..	2694	524	270	254	157	458	31	2	159	74	133	798	0	798	452	172	1472	4166
NC St Univ, Raleigh .	2648	203	89	114	22	695	79	86	99	166	142	1190	572	618	294	102	436	3084
University of Iowa ..	2597	522	141	381	95	365	44	38	74	115	199	566	0	566	412	438	3713	6310
U of Tenn, Knoxville.	2533	437	214	223	42	424	81	16	75	69	100	729	163	566	325	476	1633	4166
Duke University	2513	470	207	263	9	192	0	32	83	24	114	915	85	830	512	301	1445	3958
SUNY at Buffalo	2494	486	117	369	12	355	71	46	59	66	124	736	1	735	370	411	1959	4453
Oregon State Univ ...	2445	334	60	274	224	236	44	28	52	44	162	1285	560	725	188	16	532	2977
Cal Inst of Tech	2442	1001	580	421	176	782	113	53	152	167	186	278	0	278	12	7	10	2452
Univ of Rochester ...	2338	712	455	257	33	206	62	0	47	47	138	632	0	632	284	333	1086	3424
U of Massachusetts ..	2306	516	109	407	44	270	56	37	35	46	96	600	185	415	376	404	2009	4315
University of Utah ..	2296	408	119	289	145	502	78	20	90	39	144	449	3	446	210	438	1523	3819
Oklahoma State Univ .	2189	260	101	159	2	638	72	107	98	166	101	699	286	413	307	182	1549	3738

See footnotes at end of table.

Table 9. Distribution of science and engineering doctorates conferred at top 100 doctorate-producing institutions(1) by major field and sex: 1960-82--con.

Total, male and female

Doctorate-producing institution	Total sci & eng	Physical sciences: Sub-total	Physical sciences: Phys & astr	Physical sciences: Chemistry	Earth & env sci	Engineering: Sub-total	Engineering: Chem	Engineering: Civil	Engineering: Elec	Engineering: Mech	Math sci	Life sciences: Sub-total	Life sciences: Agri sci	Life sciences: Biology	Soc sci	Psych	Total non-sci & eng(2)	Total all flds
Syracuse University .	2168	336	194	142	46	399	60	9	175	55	153	242	1	241	593	399	2102	4270
University of Georgia	2116	267	35	232	31	0	0	0	0	0	97	894	288	606	298	529	2107	4223
Louisiana State Univ.	2024	395	135	260	101	164	110	9	12	30	110	720	361	359	298	236	1210	3234
Colorado State Univ .	2020	179	54	125	129	436	0	272	46	42	74	922	392	530	119	161	237	2257
Univ of Oklahoma	2017	219	103	116	134	426	124	50	39	41	80	527	0	527	295	336	1788	3805
Univ of Nebraska	1947	360	85	275	30	94	11	0	21	34	87	758	340	418	333	285	1979	3926
Washington University	1946	317	168	149	49	409	87	34	91	54	127	392	0	392	355	297	770	2716
Va Polytech Institute	1946	242	86	156	60	580	47	64	58	226	137	667	295	372	215	45	622	2568
Florida State Univ ..	1920	457	195	262	160	5	0	0	1	0	166	283	2	281	368	481	3598	5518
Brown University	1909	544	280	264	84	259	1	1	42	109	313	188	1	187	375	146	797	2706
Univ of Oregon, Eug .	1887	299	129	170	37	0	0	0	0	0	154	320	0	320	604	473	2547	4434
Washington St Univ ..	1863	248	101	147	35	90	6	6	5	20	100	697	281	416	447	246	771	2634
Carnegie-Mellon Univ.	1842	461	231	230	1	932	148	114	308	123	263	19	0	19	91	75	347	2189
U of Cal, San Diego .	1795	516	323	193	303	148	0	0	11	25	104	435	0	435	164	125	223	2018
Univ of Connecticut .	1785	321	121	200	20	285	22	29	49	90	45	467	17	450	299	348	1450	3235
Univ of Virginia	1779	475	291	184	30	403	38	25	70	46	144	283	0	283	277	167	1925	3704
CUNY Graduate School.	1732	277	108	169	7	136	44	4	50	32	97	326	0	326	318	571	833	2565
Wayne State Univ	1697	434	89	345	1	119	35	9	12	48	104	378	0	378	224	437	2002	3699
Kansas State Univ ...	1686	299	71	228	1	215	48	3	25	73	66	860	411	449	142	103	682	2368
US Internat'l Univ ..	1597	0	0	0	1	0	0	0	0	0	1	0	0	0	36	1559	428	2025
Univ of Cincinnati ..	1591	400	93	307	66	337	55	19	37	58	66	299	0	299	179	244	1128	2719
Rensselaer Polytech .	1571	496	215	281	51	803	82	39	136	146	142	58	1	57	20	1	95	1666
Univ of Kentucky	1504	205	78	127	7	126	19	15	9	34	121	457	219	238	375	213	902	2406
Boston University ...	1478	203	97	106	49	0	0	0	0	0	55	391	0	391	269	511	3170	4648
Polytechnic Inst, NY.	1443	543	175	368	3	787	92	23	319	96	109	0	0	0	1	0	3	1446
Univ of Notre Dame ..	1440	456	186	270	1	282	60	21	42	78	162	187	1	186	271	81	659	2099
U of Cal, Riverside .	1437	310	156	154	35	0	0	0	0	0	106	667	212	455	232	87	183	1620
Catholic Univ of Am .	1431	386	271	115	2	225	5	14	43	70	68	164	0	164	218	368	1897	3328
Rice University	1418	478	280	198	164	427	128	38	115	79	116	128	0	128	86	19	318	1736
Vanderbilt University	1383	309	144	165	0	169	24	22	41	18	60	354	0	354	244	247	755	2138
University of Hawaii.	1361	154	40	114	103	49	0	1	32	0	6	486	140	346	410	153	202	1563
SUNY at Stony Brook .	1304	373	258	115	37	155	0	0	37	53	162	193	1	192	132	252	239	1543
Illinois Inst Techn .	1281	240	78	162	2	514	95	39	124	126	99	79	0	79	27	320	25	1306
U of Cal, Santa Barb.	1262	296	91	205	58	150	17	0	79	26	82	242	1	241	321	113	577	1839
University of Houston	1219	207	51	156	7	257	89	11	57	68	93	160	0	160	73	422	974	2193
Tulane Univ of La ..	1192	145	52	93	23	130	55	15	5	39	114	429	0	429	228	123	795	1987
Temple University ...	1173	261	109	152	0	0	0	0	0	0	51	287	0	287	144	430	2184	3357
George Washington U .	1168	69	21	48	28	190	0	3	49	33	88	331	1	330	237	225	1312	2480
Georgia Inst of Tech.	1151	365	128	237	12	692	79	61	114	146	58	9	0	9	2	13	6	1157
West Virginia Univ ..	1105	151	49	102	36	198	37	51	20	48	1	457	73	384	87	175	748	1853
Univ of Delaware	1068	350	83	267	45	286	155	16	28	54	58	161	19	142	28	140	249	1317
Fordham University ..	1056	205	50	155	3	0	0	0	0	0	9	185	0	185	174	480	1398	2454
Utah State University	1018	97	39	58	18	183	0	73	30	15	0	514	225	289	75	131	407	1425
Arizona State Univ ..	1007	205	63	142	24	220	5	9	75	45	45	147	0	147	65	301	1556	2563
Lehigh University ...	998	234	98	136	35	479	85	93	43	117	112	63	0	63	46	29	430	1428
Sthrn Ill U, Carbondl	980	99	20	79	3	2	0	0	0	0	27	193	1	192	326	330	1612	2592
Georgetown University	965	235	110	125	0	0	0	0	0	0	16	317	1	316	397	0	441	1406
Univ of New Mexico ..	935	186	76	110	58	228	12	33	107	40	103	106	0	106	100	154	1202	2137
St Louis University .	933	148	70	78	71	0	0	0	0	0	76	222	0	222	141	275	1554	2487
Brandeis University .	877	288	144	144	0	2	0	0	1	0	97	220	0	220	199	71	803	1680

See footnotes at end of table.

Table 9. Distribution of science and engineering doctorates conferred at top 100 doctorate-producing institutions(1) by major field and sex: 1960-82--con.

Male

Doctorate-producing institution	Total sci & eng	Physical sciences: Sub-total	Physical sciences: Phyc& astr	Physical sciences: Chem-istry	Earth & env sci	Engineering: Sub-total	Engineering: Chem	Engineering: Civil	Engineering: Elec	Engineering: Mech	Math sci	Life sciences: Sub-total	Life sciences: Agri sci	Life sciences: Bio-logy	Soc sci	Psych	Total non-sci & eng(2)	Total all flds
Univ of Cal, Berkeley	9675	2059	1054	1005	285	2638	259	513	533	474	929	1766	227	1539	1640	358	3188	12863
U of Illinois, Urbana	8510	1904	757	1147	243	2420	207	530	639	423	511	1904	707	1197	1015	513	3588	12098
Univ of Wis, Madison.	8128	1493	522	971	388	1161	233	121	221	297	630	2617	932	1685	1463	376	4619	12547
Mass Inst of Tech ...	7314	1841	961	880	610	3302	345	284	700	510	558	430	30	400	716	57	332	7646
Univ of Michigan	6389	937	406	531	286	1612	207	115	306	280	445	1100	179	921	1169	840	4008	10397
Purdue University ...	6619	1281	342	939	68	2006	163	264	493	480	374	1685	615	1070	584	621	1251	7870
Stanford University .	6269	989	612	377	411	2689	119	222	958	410	625	485	5	480	751	319	2333	8602
Cornell University ..	6029	1264	729	535	91	1138	86	155	253	166	357	1944	853	1091	1038	197	1526	7555
Ohio State University	5586	1064	385	679	209	1209	112	82	327	162	252	1445	443	1002	784	623	3877	9463
Univ of Minnesota ...	5436	695	248	447	92	954	239	63	216	239	267	1836	678	1158	931	661	3102	8538
Harvard University ..	5202	1357	824	533	231	240	0	8	18	39	515	834	1	833	1680	345	4350	9552
Univ of Cal, L.A	5023	845	427	418	316	1120	41	28	238	137	409	1009	17	992	924	400	2569	7592
Michigan State Univ .	5222	753	204	549	97	559	32	60	126	127	225	2048	1028	1020	965	575	3672	8894
Columbia University .	4446	942	531	411	318	760	117	35	172	173	244	367	0	367	1334	451	3095	7541
Univ of Texas, Austin	4382	966	468	498	191	1080	139	208	242	208	309	660	1	659	612	564	2426	6808
University of Chicago	4030	929	512	417	156	0	0	0	0	0	337	755	0	755	1459	394	2422	6452
New York University .	3639	507	285	222	110	540	77	44	135	63	464	481	3	478	846	691	3706	7345
Iowa State University	4351	919	285	634	49	976	149	56	217	90	246	1473	754	719	578	110	440	4791
Univ of Washington ..	3926	770	312	458	344	675	118	104	153	38	239	1024	287	737	600	274	1761	5687
Penn State University	4058	914	390	524	444	825	90	63	105	153	205	903	313	590	454	313	2322	6380
Univ of Pennsylvania.	3569	730	335	395	16	891	127	37	322	107	215	583	0	583	938	196	2021	5590
Northwestern Univ ...	3285	606	164	442	77	1184	172	210	145	192	216	316	0	316	617	269	1944	5229
Yale University	3281	873	510	363	134	303	64	2	79	51	266	625	75	550	832	248	2151	5432
U of Md, College Park	3195	921	615	306	36	534	111	32	145	88	289	724	254	470	395	296	1486	4681
Princeton University.	3220	948	565	383	181	762	250	64	176	75	370	180	0	180	630	149	1227	4447
Indiana University ..	2856	635	245	390	123	3	0	0	0	0	166	693	0	693	929	307	5182	8038
University of Florida	2996	588	181	407	17	722	83	46	161	102	88	872	394	478	406	303	1398	4394
Rutgers, St U of NJ..	2715	505	173	332	82	335	25	33	46	65	181	1095	321	774	294	223	1447	4162
Univ of Cal, Davis ..	2897	401	126	275	47	332	22	61	33	61	50	1828	310	1518	203	36	209	3106
Texas A & M Univ	3020	434	141	293	266	683	67	169	67	77	115	1219	628	591	265	38	790	3810
Univ of Colorado	2550	705	405	300	159	338	51	92	95	31	164	327	0	327	553	304	1266	3816
U of NC Chapel Hill .	2350	515	151	364	114	52	1	0	0	0	190	540	0	540	647	292	1777	4127
Case Western Reserve.	2518	714	290	424	40	852	69	23	114	125	203	299	0	299	155	255	901	3419
Univ of Pittsburgh ..	2401	609	255	354	53	441	83	55	140	84	132	428	0	428	505	233	2349	4750
Univ of Southern Cal.	2305	282	106	176	69	720	30	33	336	53	97	365	0	365	512	260	3832	6137
University of Kansas.	2304	539	113	426	81	286	59	13	92	43	86	620	1	619	296	396	1321	3625
U of Missouri, Columb	2453	250	105	145	74	381	46	26	154	37	82	876	368	508	453	337	1828	4281
University of Arizona	2401	478	266	212	272	371	17	52	114	52	72	720	255	465	272	216	746	3147
Johns Hopkins Univ ..	2296	477	267	210	145	447	31	2	159	72	123	634	0	634	355	115	1052	3348
NC St Univ, Raleigh .	2452	187	85	102	21	681	77	84	98	165	134	1084	549	535	273	72	336	2788
University of Iowa ..	2328	496	136	360	94	360	41	38	74	115	179	472	0	472	369	358	2934	5262
U of Tenn, Knoxville.	2264	416	205	211	40	421	81	16	75	69	92	602	148	454	294	399	1090	3354
Duke University	2094	429	201	228	8	187	0	31	82	24	103	719	84	635	636	212	1145	3239
SUNY at Buffalo	2073	454	115	339	11	346	71	45	58	65	114	578	1	577	277	293	1474	3547
Oregon State Univ ...	2274	314	59	255	212	236	44	28	52	44	146	1184	531	653	173	9	406	2680
Cal Inst of Tech	2310	943	561	382	169	767	111	52	150	146	181	235	0	235	11	4	9	2319
Univ of Rochester ...	1982	658	439	219	33	205	62	0	44	47	122	483	0	483	236	245	780	2762
U of Massachusetts ..	1886	459	105	354	39	262	56	36	35	44	84	478	163	315	291	273	1323	3209
University of Utah ..	2087	393	118	275	140	496	77	19	89	38	141	399	3	396	186	332	1177	3264
Oklahoma State Univ .	2044	247	97	150	2	633	71	107	95	166	93	650	278	372	277	142	1144	3188

See footnotes at end of table.

Table 9. Distribution of science and engineering doctorates conferred at top 100 doctorate-producing institutions(1) by major field and sex: 1960-82--con.

Male

Doctorate-producing institution	Total sci & eng	Physical sciences: Sub-total	Physical sciences: Phys& astr	Physical sciences: Chem-istry	Earth & env sci	Engineering: Sub-total	Engineering: Chem	Engineering: Civil	Engineering: Elec	Engineering: Mech	Math sci	Life sciences: Sub-total	Life sciences: Agri sci	Life sciences: Bio-logy	Soc sci	Psych	Total non-sci & eng(2)	Total all flds
Syracuse University .	1892	318	188	130	46	395	59	9	174	55	133	202	1	201	529	269	1612	3504
University of Georgia	1796	258	35	223	28	0	0	0	0	0	89	787	270	517	256	378	1476	3272
Louisiana State Univ.	1823	364	131	233	98	163	109	9	12	30	101	658	343	315	263	176	898	2721
Colorado State Univ .	1888	168	52	116	126	433	0	270	46	42	65	863	376	487	110	123	188	2076
Univ of Oklahoma	1787	213	101	112	128	414	124	46	38	40	72	434	0	434	264	262	1350	3137
Univ of Nebraska	1734	338	85	253	29	89	10	0	19	33	80	687	324	363	295	216	1576	3310
Washington University	1616	291	160	131	46	404	87	34	90	54	115	286	0	286	282	192	528	2144
Va Polytech Institute	1793	225	84	141	54	572	46	63	58	224	124	593	278	315	196	29	366	2159
Florida State Univ ..	1647	420	188	232	156	5	0	0	1	0	149	242	1	241	315	360	2432	4079
Brown University	1657	503	272	231	76	255	1	1	40	108	298	123	1	122	299	103	515	2172
Univ of Oregon, Eug .	1565	283	122	161	34	0	0	0	0	0	146	255	0	255	527	320	1966	3531
Washington St Univ ..	1679	242	98	144	35	89	6	6	5	20	95	638	268	370	386	194	642	2321
Carnegie-Mellon Univ.	1763	436	226	210	1	923	145	114	306	122	243	11	0	11	85	64	282	2045
U of Cal, San Diego .	1537	473	310	163	283	147	0	0	11	25	90	332	0	332	122	90	150	1687
Univ of Connecticut .	1470	299	117	182	20	284	22	29	49	90	41	353	14	339	229	244	1035	2505
Univ of Virginia	1582	443	281	162	30	393	36	25	70	46	135	209	0	209	251	121	1419	3001
CUNY Graduate School.	1149	247	102	145	3	136	44	6	50	32	70	204	0	204	205	284	387	1536
Wayne State Univ	1373	406	85	321	1	115	32	9	12	48	92	291	0	291	168	300	1412	2785
Kansas State Univ ...	1540	284	70	214	1	213	47	3	25	72	55	774	378	396	126	87	436	1976
US Internat'l Univ ..	1111	0	0	0	1	0	0	0	0	0	1	0	0	0	29	1080	325	1436
Univ of Cincinnati ..	1347	353	86	267	62	331	56	19	36	58	57	239	0	239	151	154	787	2134
Rennselaer Polytech .	1504	464	206	258	48	795	80	39	136	146	132	45	1	44	19	1	78	1582
Univ of Kentucky	1322	191	74	117	7	124	19	15	9	33	110	388	193	195	338	164	636	1958
Boston University ...	975	171	92	79	46	0	0	0	0	0	44	235	0	235	183	296	2016	2991
Polytechnic Inst, NY.	1391	511	166	345	3	780	91	23	315	96	96	0	0	0	1	0	3	1394
Univ of Notre Dame ..	1270	414	183	231	1	280	59	21	42	78	151	138	1	137	226	60	504	1774
U of Cal, Riverside .	1267	288	146	142	32	0	0	0	0	0	94	610	200	410	186	57	111	1378
Catholic Univ of Am .	1117	358	262	96	1	219	4	14	42	68	55	103	0	103	150	231	1227	2344
Rice University	1314	455	274	181	153	419	127	38	110	78	106	97	0	97	74	10	183	1497
Vanderbilt University	1185	293	141	152	0	164	24	22	41	18	50	277	0	277	216	185	610	1795
University of Hawaii.	1137	142	35	107	98	48	0	1	31	0	6	410	126	284	332	101	139	1276
SUNY at Stony Brook .	1053	334	235	99	35	151	0	0	37	52	146	145	1	144	86	156	148	1201
Illinois Inst Techn .	1130	222	74	148	2	507	95	39	123	122	89	58	0	58	15	237	23	1153
U of Cal, Santa Barb.	1100	277	87	190	53	148	16	0	78	26	72	192	1	191	273	85	444	1544
University of Houston	1025	184	50	134	7	254	87	11	56	68	75	133	0	133	60	312	566	1591
Tulane Univ of La ...	994	126	48	78	20	129	55	15	5	39	102	340	0	340	190	87	576	1570
Temple University ...	907	242	103	139	0	0	0	0	0	0	38	221	0	221	112	294	1542	2449
George Washington U .	886	57	18	39	26	187	0	3	49	33	77	221	1	220	201	117	964	1850
Georgia Inst of Tech.	1126	353	125	228	11	690	79	61	114	146	54	8	0	8	2	8	5	1131
West Virginia Univ ..	975	145	48	97	32	197	37	51	20	47	1	389	67	322	84	127	546	1521
Univ of Delaware	955	328	77	251	41	279	152	15	28	54	54	132	19	113	22	99	167	1122
Fordham University ..	670	164	46	118	2	0	0	0	0	0	7	128	0	128	120	249	859	1529
Utah State University	941	92	38	54	15	177	0	71	30	15	0	472	212	260	66	116	343	1284
Arizona State Univ ..	862	194	62	132	23	218	5	9	75	45	41	118	0	118	51	217	1124	1986
Lehigh University ...	958	227	97	130	33	476	84	93	43	116	101	56	0	56	39	26	320	1278
Sthrn Ill U, Carbondl	824	90	20	70	2	1	0	0	0	0	26	166	1	165	288	251	1199	2023
Georgetown University	711	202	103	99	0	0	0	0	0	0	13	202	1	201	294	0	339	1050
Univ of New Mexico ..	811	170	71	99	58	227	12	33	106	40	96	81	0	81	71	108	841	1652
St Louis University .	722	135	67	68	70	0	0	0	0	0	56	171	0	171	103	187	1016	1738
Brandeis University .	653	247	138	109	0	2	0	0	1	0	84	160	0	160	111	49	536	1189

See footnotes at end of table.

Table 9. Distribution of science and engineering doctorates conferred at top 100 doctorate-producing institutions(1) by major field and sex: 1960-82--con.

Female

Doctorate-producing institution	Total sci & eng	Physical sciences			Earth & env sci	Engineering					Math sci	Life sciences			Soc sci	Psych	Total non-sci & eng(2)	Total all flds
		Sub-total	Phys& astr	Chem-istry		Sub-total	Chem	Civil	Elec	Mech		Sub-total	Agri sci	Bio-logy				
Univ of Cal, Berkeley	1377	144	38	106	29	39	6	2	6	3	77	471	14	457	382	233	1244	2621
U of Illinois, Urbana	872	125	23	102	12	21	2	2	5	4	54	324	44	280	171	165	1206	2078
Univ of Wis, Madison.	1077	86	14	72	27	14	1	2	1	2	49	470	66	404	232	199	1447	2524
Mass Inst of Tech ...	523	126	35	91	27	59	8	7	5	3	36	149	10	139	106	20	44	567
Univ of Michigan	1083	65	17	48	24	13	2	1	0	2	30	294	5	289	290	367	1504	2587
Purdue University ...	552	59	13	46	2	30	3	4	7	2	19	197	25	172	74	171	441	993
Stanford University .	682	59	22	37	32	49	1	5	13	6	42	178	1	177	185	137	827	1509
Cornell University ..	827	84	19	65	4	21	3	1	8	1	41	310	60	250	211	156	529	1356
Ohio State University	860	87	15	72	5	8	1	0	0	0	26	274	20	254	170	290	1474	2334
Univ of Minnesota ...	837	72	9	63	1	13	5	0	4	1	23	257	31	226	149	322	971	1808
Harvard University ..	1006	83	34	49	17	6	0	0	0	1	52	313	1	312	354	181	1438	2444
Univ of Cal, L.A	946	71	18	53	29	27	2	2	6	1	30	289	1	288	273	227	1200	2146
Michigan State Univ .	591	59	6	53	6	4	0	1	0	0	25	203	53	150	111	183	991	1582
Columbia University .	1366	103	33	70	19	12	2	1	0	2	33	256	0	256	478	467	1617	2983
Univ of Texas, Austin	696	58	17	41	6	11	2	1	1	0	26	193	0	193	195	209	1087	1783
University of Chicago	788	70	17	53	11	0	0	0	0	0	27	177	0	177	298	205	707	1495
New York University .	1090	47	15	32	6	4	1	0	0	0	63	246	1	245	220	504	1915	3005
Iowa State University	295	45	4	41	3	10	3	2	1	0	15	123	34	89	51	48	183	478
Univ of Washington ..	602	58	11	47	20	4	0	0	0	1	22	208	10	198	135	155	579	1181
Penn State University	427	54	11	43	19	5	1	1	0	0	16	132	23	109	56	147	714	1141
Univ of Pennsylvania.	701	94	16	78	1	12	2	0	0	0	31	241	0	241	205	117	880	1581
Northwestern Univ ...	618	74	10	64	2	32	2	5	0	2	20	136	0	136	168	186	752	1370
Yale University	614	81	25	56	11	6	3	0	0	1	26	231	5	226	165	94	808	1422
U of Md, College Park	583	85	38	47	8	11	0	0	6	1	20	170	24	146	75	214	979	1562
Princeton University.	245	41	11	30	5	14	3	3	3	1	24	41	0	41	92	28	219	464
Indiana University .	512	38	9	29	3	0	0	0	0	0	17	176	0	176	175	103	1669	2181
University of Florida	359	30	5	25	3	11	2	1	0	0	19	104	26	78	71	121	611	970
Rutgers, New Brunsw .	580	46	13	33	8	3	0	1	0	0	36	273	23	250	90	124	782	1362
Univ of Cal, Davis ..	392	35	9	26	6	9	1	1	1	0	7	259	9	250	43	33	78	470
Texas A & M Univ	178	33	6	27	10	7	0	1	0	2	13	72	30	42	20	23	206	384
Univ of Colorado	450	30	10	20	11	3	0	0	2	0	8	126	0	126	139	133	588	1038
U of NC Chapel Hill .	544	45	7	38	4	2	0	0	0	0	22	176	0	176	153	142	710	1254
Case Western Reserve.	366	42	10	32	2	12	1	0	1	0	18	100	0	100	71	121	491	857
Univ of Pittsburgh ..	460	56	19	37	8	6	2	0	0	1	9	149	0	149	98	134	1213	1673
Univ of Southern Cal.	426	42	2	40	4	12	1	0	6	1	11	87	0	87	97	173	1333	1759
University of Kansas.	420	41	4	37	5	3	0	0	2	1	5	118	0	118	58	190	485	905
U of Missouri, Columb	266	14	2	12	3	9	0	1	4	1	4	87	23	64	76	73	395	661
University of Arizona	308	22	10	12	10	7	1	2	0	1	1	100	12	88	77	91	336	644
Johns Hopkins Univ ..	398	47	3	44	12	11	0	0	0	2	10	164	0	164	97	57	420	818
NC St Univ, Raleigh .	196	16	4	12	1	14	2	2	1	1	8	106	23	83	[illegible]	30	100	296
University of Iowa ..	269	26	5	21	1	5	3	0	0	0	20	94	0	94	43	80	779	1048
U of Tenn, Knoxville.	269	21	9	12	2	3	0	0	0	0	8	127	15	112	31	77	543	812
Duke University	419	41	6	35	1	5	0	1	1	0	11	196	1	195	76	89	300	719
SUNY at Buffalo	421	32	2	30	1	9	0	1	1	1	10	158	0	158	93	118	485	906
Oregon State Univ ...	171	20	1	19	12	0	0	0	0	0	16	101	29	72	15	7	126	297
Cal Inst of Tech	132	58	19	39	7	15	2	1	2	1	5	43	0	43	1	3	1	133
Univ of Rochester ...	356	54	16	38	0	1	0	0	1	0	16	149	0	149	68	88	306	662
U of Massachusetts ..	420	57	4	53	5	8	0	1	0	2	12	122	22	100	85	131	686	1106
University of Utah ..	209	15	1	14	5	6	1	1	1	1	3	50	0	50	24	106	346	555
Oklahoma State Univ .	145	13	4	9	0	5	1	0	3	0	8	49	8	41	30	40	405	550

See footnotes at end of table.

Table 9. Distribution of science and engineering doctorates conferred at top 100 doctorate-producing institutions(1) by major field and sex: 1960-82--con.

Female

Doctorate-producing institution	Total sci & eng	Physical sciences Sub-total	Phys& astr	Chem-istry	Earth & env sci	Engineering Sub-total	Chem	Civil	Elec	Mech	Math sci	Life sciences Sub-total	Agri sci	Bio-logy	Soc sci	Psych	Total non-sci & eng(2)	Total all flds
							Field of study											
Syracuse University .	276	18	6	12	0	4	1	0	1	0	20	40	0	40	64	130	490	766
University of Georgia	320	9	0	9	3	0	0	0	0	0	8	107	18	89	42	151	631	951
Louisiana State Univ.	201	31	4	27	3	1	1	0	0	0	9	62	18	44	35	60	312	513
Colorado State Univ .	132	11	2	9	3	3	0	2	0	0	9	59	16	43	9	38	49	181
Univ of Oklahoma	230	6	2	4	6	12	0	4	1	1	8	93	0	93	31	74	438	668
Univ of Nebraska	213	22	0	22	1	5	1	0	2	1	7	71	16	55	38	69	403	616
Washington University	330	26	8	18	3	5	0	0	1	0	12	106	0	106	73	105	242	572
Va Polytech Institute	153	17	2	15	6	8	1	1	0	2	13	74	17	57	19	16	256	409
Florida State Univ ..	273	37	7	30	4	0	0	0	0	0	17	41	1	40	53	121	11661439	
Brown University	252	41	8	33	4	4	0	0	2	1	15	65	0	65	76	43	282	534
Univ of Oregon, Eug .	322	16	7	9	3	0	0	0	0	0	8	65	0	65	77	153	581	903
Washington St Univ ..	184	6	3	3	0	1	0	0	0	0	5	59	13	46	61	52	129	313
Carnegie-Mellon Univ.	79	25	5	20	0	9	3	0	2	1	20	8	0	8	6	11	65	144
U of Cal, San Diego .	258	43	13	30	20	1	0	0	0	0	14	103	0	103	42	35	73	331
Univ of Connecticut .	315	22	4	18	0	1	0	0	0	0	4	114	3	111	70	104	415	730
Univ of Virginia	197	32	10	22	0	10	2	0	0	0	9	74	0	74	26	46	506	703
CUNY Graduate School.	583	30	6	24	4	0	0	0	0	0	27	122	0	122	113	287	4461029	
Wayne State Univ	324	28	4	24	0	4	3	0	0	0	12	87	0	87	56	137	590	914
Kansas State Univ ...	146	15	1	14	0	2	1	0	0	1	11	86	33	53	16	16	246	392
US Internat'l Univ ..	486	0	0	0	0	0	0	0	0	0	0	0	0	0	7	479	103	589
Univ of Cincinnati .	244	47	7	40	4	6	1	0	1	0	9	60	0	60	28	90	341	585
Rensselaer Polytech .	67	32	9	23	3	8	2	0	2	0	10	13	0	13	1	0	17	84
Univ of Kentucky	182	14	4	10	0	2	0	0	0	1	11	69	26	43	37	49	266	448
Boston University ...	503	32	5	27	3	0	0	0	0	0	11	156	0	156	86	215	11541657	
Polytechnic Inst, NY.	52	32	9	23	0	7	1	0	6	0	13	0	0	0	0	0	0	52
Univ of Notre Dame ..	170	42	3	39	0	2	1	0	0	0	11	49	0	49	45	21	155	325
U of Cal, Riverside .	170	22	10	12	3	0	0	0	0	0	12	57	12	45	46	30	72	262
Catholic Univ of Am .	314	28	9	19	1	6	1	0	1	2	13	61	0	61	68	137	670	984
Rice University	104	23	6	17	11	8	1	0	5	1	10	31	0	31	12	9	135	239
Vanderbilt University	198	16	3	13	0	5	0	0	0	0	10	77	0	77	28	62	145	343
University of Hawaii.	224	12	5	7	5	1	0	0	1	0	0	76	14	62	78	52	63	287
SUNY at Stony Brook..	251	39	23	16	2	4	0	0	0	1	16	48	0	48	46	96	91	342
Illinois Inst Techn..	151	18	4	14	0	7	0	0	1	6	10	21	0	21	12	83	2	153
U of Cal, Santa Barb.	162	19	4	15	5	2	1	0	1	0	10	50	0	50	48	28	133	295
University of Houston	194	23	1	22	0	3	2	0	1	0	18	27	0	27	13	110	408	602
Tulane Univ of La ...	198	19	4	15	3	1	0	0	0	0	12	89	0	89	38	36	219	417
Temple University ...	266	19	6	13	0	0	0	0	0	0	13	66	0	66	32	136	642	908
George Washington U..	282	12	3	9	2	3	0	0	0	0	11	110	0	110	36	108	348	630
Georgia Inst of Tech.	25	12	3	9	1	2	0	0	0	0	4	1	0	1	0	5	1	26
West Virginia Univ ..	130	6	1	5	4	1	0	0	0	1	0	68	6	62	3	48	202	332
Univ of Delaware	113	22	6	16	4	7	3	1	0	0	4	29	0	29	6	41	82	195
Fordham University ..	386	41	4	37	1	0	0	0	0	0	2	57	0	57	54	231	539	925
Utah State University	77	5	1	4	0	6	0	2	0	0	0	42	13	29	9	15	64	141
Arizona State Univ ..	145	11	1	10	1	2	0	0	0	0	4	29	0	29	14	84	432	577
Lehigh University ...	40	7	1	6	2	3	1	0	0	1	11	7	0	7	7	3	110	150
Sthrn Ill U, Carbondl	156	9	0	9	1	1	0	0	0	0	1	27	0	27	38	79	413	569
Georgetown University	254	33	7	26	0	0	0	0	0	0	3	115	0	115	103	0	102	356
Univ of New Mexico ..	124	16	5	11	0	1	0	0	1	0	7	25	0	25	29	46	361	485
St Louis University .	211	13	3	10	1	0	0	0	0	0	20	51	0	51	38	88	538	749
Brandeis University .	224	41	6	35	0	0	0	0	0	0	13	60	0	60	88	22	267	491

(1) The top 100 institutions are ranked according to S/E doctorate production (column 1). For all three panels (total, male, female) institutions are listed in the order of ranking for total S/E doctorate production. Institutional rankings for male and female may differ.

(2) Non-science/engineering doctorates in this table include doctorates whose field of specialization is unknown.

SOURCES: National Science Foundation and National Research Council

Table 10. Distribution of new science and engineering doctorates by state of high school last attended(1) and state of doctorate-granting institution: 1982

		State of doctoral institution														
State of high school	Total	AL	AK	AZ	AR	CA	CO	CT	DE	DC	FL	GA	HA	ID	IL	IN	IA
Total, all states	12566	79	4	177	48	1729	239	216	61	197	264	241	37	29	693	357	193
Alabama	113	24	0	1	0	5	0	2	0	2	3	9	0	0	5	5	2
Alaska	8	0	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0
Arizona	84	0	0	20	0	25	1	0	0	2	0	1	0	0	4	2	1
Arkansas	64	1	0	0	12	0	0	2	0	0	2	3	0	0	3	3	4
California	1333	2	1	26	1	693	31	18	1	4	12	4	6	3	37	22	6
Colorado	162	0	0	5	0	26	36	4	0	0	3	4	2	1	4	3	1
Connecticut	305	1	0	1	0	29	5	41	1	4	5	1	2	0	13	2	2
Delaware	60	0	0	0	0	8	1	3	9	2	0	1	0	0	2	1	0
Florida	257	2	0	2	1	15	4	6	1	7	62	28	0	0	8	5	2
Georgia	158	3	0	1	1	12	2	3	2	4	9	57	0	0	3	1	2
Hawaii	67	0	0	1	0	12	2	0	0	0	0	1	8	0	2	1	0
Idaho	46	0	0	1	0	7	2	0	0	0	0	0	0	2	1	0	2
Illinois	714	2	0	9	3	70	14	7	1	6	12	10	1	1	213	40	27
Indiana	225	1	0	4	0	25	4	3	1	4	2	1	0	1	20	54	4
Iowa	162	1	0	3	0	20	1	0	0	0	1	0	0	0	9	5	65
Kansas	131	0	0	4	4	23	3	1	0	0	1	1	0	0	7	2	1
Kentucky	76	2	0	0	0	4	1	0	0	0	2	4	0	0	2	6	3
Louisiana	120	2	0	0	2	4	1	0	0	2	5	3	0	0	3	1	1
Maine	44	0	0	0	0	0	0	3	1	0	1	2	0	0	2	0	0
Maryland	361	1	0	3	0	32	5	8	3	31	4	8	0	0	15	5	1
Massachusetts	482	3	0	4	0	49	4	12	5	6	11	4	2	0	17	14	5
Michigan	415	2	0	3	2	46	7	4	4	0	6	4	2	1	32	15	3
Minnesota	240	0	0	5	0	24	6	4	0	1	2	5	0	2	16	6	12
Mississippi	77	4	0	1	1	2	1	0	0	0	4	5	0	0	2	0	0
Missouri	241	1	0	3	9	27	3	1	0	2	1	5	0	1	16	1	12
Montana	41	0	0	4	0	4	0	0	0	0	1	0	1	0	3	1	0
Nebraska	115	0	0	1	0	9	8	1	0	1	2	1	0	0	6	2	7
Nevada	29	0	0	1	0	9	0	0	0	0	0	0	0	0	2	1	0
New Hampshire	58	1	1	2	0	6	4	0	0	1	0	0	0	0	5	2	1
New Jersey	670	1	0	4	0	52	8	11	8	14	14	6	2	2	30	13	0
New Mexico	78	1	0	1	1	12	1	1	0	0	0	0	0	0	3	2	3
New York	1862	2	1	13	0	150	25	37	4	32	35	18	6	2	66	26	13
North Carolina	157	2	0	1	0	9	2	1	0	4	5	4	0	0	6	0	0
North Dakota	39	0	0	4	0	3	3	0	0	0	0	0	0	0	2	1	3
Ohio	689	3	0	9	0	55	12	12	5	6	13	11	0	0	33	36	4
Oklahoma	118	1	0	2	4	12	2	1	0	1	0	1	0	2	4	3	3
Oregon	112	0	0	2	0	23	5	0	0	0	1	0	0	2	2	3	0
Pennsylvania	889	4	0	13	1	61	7	11	10	20	13	10	2	1	39	27	1
Rhode Island	75	0	0	1	0	10	0	4	0	5	2	0	1	0	1	2	0
South Carolina	81	3	0	1	1	4	0	0	0	0	2	6	0	0	1	2	0
South Dakota	37	0	0	2	0	1	2	1	0	2	0	1	0	0	1	0	3
Tennessee	136	3	0	2	1	4	0	1	1	0	6	6	0	0	5	3	1
Texas	431	2	0	8	2	36	10	4	0	4	5	4	0	1	15	7	2
Utah	73	1	0	0	0	7	1	0	0	0	1	0	0	2	2	2	2
Vermont	22	0	0	0	0	3	0	1	0	0	2	0	0	0	2	2	0
Virginia	281	2	0	2	0	21	2	4	2	17	6	4	2	0	6	6	2
Washington	182	0	0	2	1	32	6	1	0	0	1	1	0	3	5	4	3
West Virginia	51	0	0	0	0	2	0	0	0	3	0	4	0	0	3	1	0
Wisconsin	258	0	0	3	0	22	4	0	0	1	4	0	0	2	14	14	7
Wyoming	25	0	0	0	0	4	0	0	1	0	0	1	0	0	0	1	2
District of Columbia	82	0	0	2	0	16	1	1	1	8	1	1	0	0	1	1	0
Puerto Rico	50	1	0	0	1	1	2	2	0	1	2	1	0	0	0	1	0

See footnote at end of table.

Table 10. Distribution of new science and engineering doctorates by state of high school last attended(1) and state of doctorate-granting institution: 1982--con.

State of high school	State of doctoral institution KS	KY	LA	ME	MD	MA	MI	MN	MS	MO	MT	NE	NV	NH	NJ	NM	NY	NC
Total, all states	133	72	101	12	249	662	494	187	92	216	30	83	14	53	246	51	1414	378
Alabama	0	1	3	0	2	2	0	0	4	1	0	0	0	0	0	0	2	5
Alaska	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Arizona	1	0	1	0	1	2	2	0	1	0	0	1	0	0	0	1	4	3
Arkansas	1	1	0	0	0	1	0	0	3	0	0	1	0	0	0	0	1	4
California	10	3	7	1	18	53	33	12	1	14	2	3	7	1	16	3	62	15
Colorado	1	0	1	0	0	6	4	2	0	4	1	0	0	0	1	0	9	2
Connecticut	0	2	0	0	9	36	8	1	0	3	0	2	0	6	7	2	48	10
Delaware	0	0	0	0	0	6	0	1	0	0	0	0	0	0	0	0	9	3
Florida	1	3	3	0	2	13	5	1	6	6	0	0	1	0	4	1	5	15
Georgia	3	1	1	0	2	3	4	0	2	3	0	1	0	0	0	0	2	7
Hawaii	2	0	0	0	1	1	3	0	0	1	0	0	0	0	0	0	3	0
Idaho	0	0	0	0	0	3	1	2	0	1	1	1	0	0	1	0	0	2
Illinois	5	3	0	1	10	19	30	10	2	12	1	4	0	0	7	4	36	14
Indiana	4	4	0	0	1	6	9	3	0	5	0	0	0	1	0	1	9	4
Iowa	1	1	2	0	2	6	2	10	1	4	0	4	0	0	0	0	9	5
Kansas	34	0	0	0	1	3	2	1	1	5	0	2	0	0	1	2	4	1
Kentucky	1	14	1	0	1	3	5	0	0	1	0	1	0	1	0	0	1	5
Louisiana	1	1	31	0	0	3	4	0	7	3	0	0	0	0	2	0	4	4
Maine	0	0	0	2	0	11	2	1	0	1	0	0	0	2	0	0	4	2
Maryland	4	3	3	0	60	18	9	3	2	4	1	1	0	1	7	2	27	13
Massachusetts	3	2	0	3	2	110	15	3	1	9	2	0	0	9	9	1	50	7
Michigan	1	2	2	1	2	11	134	7	0	5	0	0	1	0	6	1	26	5
Minnesota	5	2	1	0	2	5	7	59	3	5	2	2	0	1	3	0	12	2
Mississippi	0	0	5	0	0	2	0	1	26	2	0	0	0	0	0	0	2	3
Missouri	9	0	2	0	2	11	9	4	1	55	0	2	0	0	3	1	11	3
Montana	1	0	0	0	0	1	1	1	0	1	4	0	0	1	0	0	1	0
Nebraska	2	0	0	0	1	0	7	1	0	1	1	23	0	0	0	0	5	5
Nevada	0	0	1	0	1	0	1	0	0	0	0	0	3	0	1	0	2	1
New Hampshire	0	0	0	0	0	6	1	1	0	0	0	0	0	3	0	0	9	0
New Jersey	3	4	1	0	20	49	11	8	3	6	2	1	0	5	74	1	119	24
New Mexico	0	0	0	0	0	5	5	1	1	2	2	1	0	0	2	9	2	2
New York	13	5	6	2	40	123	58	7	5	20	1	7	0	8	52	6	712	34
North Carolina	1	2	0	0	3	5	4	0	2	4	0	1	0	0	1	0	4	59
North Dakota	1	0	0	0	1	1	1	2	0	0	0	1	0	0	0	1	0	1
Ohio	5	5	4	0	5	28	38	10	4	6	1	4	1	1	11	0	38	16
Oklahoma	3	0	0	0	0	2	0	1	2	3	0	2	0	2	1	0	4	1
Oregon	0	0	0	0	2	4	6	1	0	0	3	2	0	0	1	1	4	2
Pennsylvania	4	4	2	0	25	41	30	12	1	8	0	2	0	7	19	4	77	25
Rhode Island	1	0	0	0	1	6	2	0	0	1	0	0	1	0	3	0	5	2
South Carolina	0	0	3	0	3	1	0	0	2	1	0	0	0	0	1	0	7	11
South Dakota	0	0	0	0	0	2	0	4	0	0	2	1	0	1	0	0	1	2
Tennessee	0	2	3	0	1	3	1	1	5	1	0	0	0	1	1	0	4	10
Texas	5	0	11	0	8	11	13	3	2	1	0	3	0	0	2	4	11	5
Utah	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	1	3	1
Vermont	0	0	0	1	0	2	1	1	0	0	0	0	0	0	0	0	3	0
Virginia	0	3	2	0	12	10	5	1	3	6	0	0	0	1	4	1	16	29
Washington	1	1	0	1	2	8	3	1	0	1	1	1	0	0	1	2	9	4
West Virginia	2	2	1	0	0	0	4	0	0	0	0	1	0	0	1	0	1	2
Wisconsin	2	0	0	0	0	13	8	8	1	6	1	6	0	1	1	1	13	4
Wyoming	1	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	1	0
District of Columbia	1	1	1	0	6	3	4	1	0	1	0	1	0	0	3	1	9	3
Puerto Rico	0	0	2	0	0	3	1	0	0	2	0	0	0	0	0	0	14	0

See footnote at end of table.

Table 10. Distribution of new science and engineering doctorates by state of high school last attended(1) and state of doctorate-granting institution: 1982--con.

	State of doctoral institution																
State of high school	ND	OH	OK	OR	PA	PR	RI	SC	SD	TN	TX	UT	VT	VA	WA	WV	WI	WY
Total, all states	21	503	101	145	629	3	104	92	12	203	589	39	15	242	259	52	375	29
Alabama	1	2	1	1	1	0	1	4	0	10	9	0	0	4	1	0	0	0
Alaska	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Arizona	0	0	1	1	2	0	0	0	0	0	3	1	0	0	1	0	2	0
Arkansas	0	0	5	0	1	0	0	1	0	0	10	0	0	1	3	0	1	0
California	1	16	2	35	14	0	3	3	1	7	28	21	0	5	43	2	22	2
Colorado	0	4	1	6	4	0	0	0	1	1	8	3	0	2	8	0	3	1
Connecticut	0	7	1	3	13	0	8	1	0	5	4	0	1	4	5	4	8	0
Delaware	0	1	0	0	6	0	1	0	0	1	2	1	0	1	0	0	1	0
Florida	0	8	1	1	5	0	0	2	0	7	9	2	0	5	1	1	4	1
Georgia	0	3	0	0	2	0	0	3	0	9	3	0	0	6	1	1	1	0
Hawaii	0	0	0	2	1	0	0	0	0	0	0	1	0	1	3	0	1	0
Idaho	0	0	0	0	2	0	0	0	0	0	3	7	0	0	4	1	2	0
Illinois	2	17	7	7	17	0	3	7	1	6	14	2	1	8	9	2	37	0
Indiana	1	19	1	2	6	0	1	2	0	5	6	2	0	2	1	0	6	0
Iowa	0	5	1	2	0	0	1	0	1	0	8	0	0	3	3	0	6	0
Kansas	0	6	1	1	0	0	0	0	0	4	7	1	0	1	4	0	2	0
Kentucky	0	5	0	0	3	0	0	0	0	4	2	0	0	1	1	0	2	0
Louisiana	0	5	2	1	1	0	0	0	0	4	10	0	0	4	5	1	1	2
Maine	0	2	1	1	1	0	1	0	0	0	1	0	0	1	0	0	2	0
Maryland	1	9	1	2	21	0	2	5	0	4	7	0	0	18	6	5	6	0
Massachusetts	1	7	1	3	27	0	23	5	0	5	14	2	1	2	13	1	14	1
Michigan	1	12	3	5	11	0	4	1	0	6	10	1	0	8	4	0	13	1
Minnesota	2	7	1	0	5	0	0	0	1	2	5	1	0	4	4	0	13	1
Mississippi	0	1	0	0	0	0	0	1	0	6	7	0	0	1	0	0	0	0
Missouri	0	6	3	1	5	0	0	3	0	5	10	1	0	3	2	0	7	0
Montana	0	1	0	1	0	0	0	0	1	0	4	0	1	1	4	0	3	0
Nebraska	0	3	3	1	4	0	0	0	3	0	8	3	0	0	2	0	3	1
Nevada	0	0	0	1	0	0	0	0	0	0	0	2	0	0	1	0	1	1
New Hampshire	0	0	0	0	4	0	1	0	0	0	1	3	1	3	0	0	2	0
New Jersey	1	18	3	5	55	0	9	7	0	11	17	3	1	20	7	0	16	1
New Mexico	0	0	2	0	3	0	0	0	0	0	7	3	0	2	1	0	3	0
New York	1	48	4	13	92	0	22	11	0	18	36	11	5	23	18	3	26	2
North Carolina	0	5	1	0	3	0	0	5	0	4	4	1	0	10	2	0	2	0
North Dakota	4	2	0	1	0	0	0	0	0	0	1	2	0	0	1	1	2	0
Ohio	1	204	4	4	22	0	3	0	0	5	25	3	0	5	11	3	23	0
Oklahoma	0	1	35	0	3	0	0	0	1	2	13	0	0	2	1	0	3	0
Oregon	0	1	0	22	2	0	0	0	0	1	3	6	0	0	11	0	2	0
Pennsylvania	1	39	3	5	247	0	5	6	1	13	21	6	0	21	6	16	15	3
Rhode Island	0	5	0	1	4	0	12	0	0	0	0	1	1	1	0	0	2	0
South Carolina	0	5	0	0	1	0	0	17	0	3	2	1	0	2	1	0	0	0
South Dakota	1	2	1	0	0	0	0	0	1	0	1	1	0	0	2	0	2	0
Tennessee	0	5	2	1	0	0	0	3	0	35	11	2	0	5	1	2	3	0
Texas	1	4	5	0	4	0	0	0	0	6	212	5	0	2	4	1	8	0
Utah	0	0	0	1	1	0	0	0	0	0	9	29	0	0	2	0	3	1
Vermont	0	0	0	0	1	0	0	0	0	0	0	0	2	1	0	0	0	0
Virginia	0	3	1	2	16	0	1	2	0	9	8	2	0	52	6	1	7	2
Washington	1	1	0	8	3	0	1	0	0	1	7	5	0	1	48	0	9	2
West Virginia	0	6	0	0	2	0	0	1	0	4	3	0	0	2	0	6	0	0
Wisconsin	0	6	1	4	8	0	0	1	0	1	9	1	1	3	4	0	81	2
Wyoming	0	0	1	0	0	0	0	0	0	0	1	2	0	0	2	0	1	4
District of Columbia	0	0	0	0	3	0	2	1	0	1	2	1	0	1	1	1	1	0
Puerto Rico	0	2	1	0	2	3	0	0	0	0	4	0	0	0	1	0	3	0

(1) Only doctorates who provided data on the state of high school last attended are included in this table.

SOURCES: National Science Foundation and National Research Council

Table 11. Top 300 baccalaureate institutions of new science and engineering doctorates by major field: 1960-82(1)

		Field of study																
		Physical sciences				Engineering						Life sciences					Total	
Institution	Total sci & eng	Sub-total	Phys& astr	Chem-istry	Earth & env sci	Sub-total	Chem	Civil	Elec	Mech	Math sci	Sub-total	Agri sci	Bio-logy	Soc sci	Psych	non-sci & eng(2)	Total all flds
Univ of Cal, Berkeley	5643	1093	594	499	189	947	101	83	239	187	356	1272	133	1139	1058	728	2231	7874
Mass Inst of Tech ...	4799	1502	1140	362	202	1839	192	82	658	241	571	369	6	363	239	77	323	5122
U of Illinois, Urbana	4157	761	299	462	126	1050	125	98	299	186	154	1112	281	831	513	441	1922	6079
Univ of Michigan	3934	643	313	330	119	842	100	38	161	164	237	733	103	630	652	708	2202	6136
CUNY-City College ...	3910	780	342	438	144	671	102	37	258	130	236	509	9	500	539	1031	1682	5592
Cornell Univ, NY	3836	638	405	233	110	711	99	41	184	82	221	1181	241	940	590	385	1207	5043
U of Wis, Madison ...	3402	493	182	311	207	580	100	55	121	120	142	1025	281	744	510	445	2002	5404
Univ of Cal, L.A. ...	3326	592	283	309	162	408	24	20	90	53	210	664	15	649	609	681	2038	5364
Harvard University ..	2968	655	432	223	114	123	3	7	37	14	414	498	12	486	808	356	1780	4748
Penn State University	2937	453	190	263	167	608	94	33	96	78	97	925	309	616	306	381	1369	4306
Univ of Texas, Austin	2828	503	254	249	106	585	75	66	159	135	223	544	21	523	459	408	1675	4503
U of Minnesota, Minn.	2811	422	196	226	89	488	89	36	131	113	128	803	252	551	445	436	1900	4711
Purdue Univ, Indiana.	2703	391	152	239	40	1051	117	61	265	259	125	705	251	454	205	186	822	3525
CUNY-Brooklyn Coll ..	2516	438	123	315	55	39	2	0	5	4	192	469	2	467	406	919	1755	4271
Ohio State Univ	2424	327	161	166	73	402	42	14	110	53	91	782	238	544	420	329	1840	4264
Michigan State Univ .	2415	286	127	159	84	307	37	17	74	71	127	869	281	588	353	389	1615	4030
Stanford Univ, Cal ..	2244	329	233	96	133	408	39	37	120	55	148	399	13	386	471	356	1317	3561
Rutgers, St U of N.J.	2216	413	113	300	104	263	22	15	51	43	76	698	165	533	290	372	1060	3276
Univ of Washington ..	2125	340	167	173	145	379	42	32	95	51	110	461	119	342	411	279	1093	3218
Iowa State University	2077	295	117	178	58	563	88	42	145	68	86	717	394	323	244	114	507	2584
Columbia Univ, NY ...	1893	407	226	181	59	318	77	21	80	48	179	250	5	245	381	299	1205	3098
University of Chicago	1864	394	250	144	55	26	2	0	5	6	217	396	2	394	463	313	967	2831
New York University .	1829	235	96	139	54	271	34	23	57	35	111	293	1	292	310	555	1572	3401
Yale University, CT .	1724	351	237	114	74	172	25	6	58	25	150	285	11	274	396	296	1278	3002
Rensselaer Poly, NY .	1720	567	341	226	55	699	92	33	166	91	150	150	4	146	38	61	129	1849
Princeton Univ, NJ ..	1621	397	280	117	94	287	56	22	70	31	194	199	4	195	307	143	921	2542
Case Western Reserve.	1575	487	263	224	30	454	49	16	92	65	121	179	2	177	127	177	519	2094
Cal Institute of Tech	1566	658	498	160	102	334	40	11	130	38	223	179	1	178	46	24	38	1604
University of Florida	1556	245	110	135	37	322	31	16	89	53	76	400	135	265	235	241	1094	2650
Univ of Pennsyvlania.	1530	269	122	147	25	250	32	12	86	38	99	293	3	290	338	256	991	2521
Univ of Col, Boulder.	1509	247	130	117	82	221	33	30	61	30	83	297	9	288	338	241	844	2353
U of MD, College Park	1505	209	108	101	32	224	10	15	59	38	69	478	135	343	211	282	955	2460
University of Utah ..	1496	206	97	109	65	353	70	21	74	39	90	317	16	301	242	223	1145	2641
U of Missouri, Columb	1386	154	63	91	45	236	28	15	76	41	45	479	193	286	262	165	967	2353
Brigham Young U, Utah	1371	240	99	141	52	144	31	20	28	34	39	360	106	254	297	239	1468	2839
Northwestern U, Ill .	1366	227	82	145	31	287	51	23	61	43	70	206	5	201	266	279	1116	2482
University of Kansas.	1339	243	101	142	48	272	48	23	74	48	74	280	5	275	221	201	884	2223
Oklahoma State Univ .	1329	123	45	78	22	317	44	35	69	77	52	565	296	269	164	86	741	2070
Brown University, RI.	1322	266	124	142	66	143	2	7	35	40	143	250	3	247	216	238	607	1929
CUNY-Queens College .	1316	216	76	140	38	33	5	1	6	2	77	193	1	192	226	533	1033	2349
U of Notre Dame, Ind.	1309	277	138	139	37	409	65	32	87	73	83	183	3	180	184	136	654	1963
Texas A&M University.	1306	160	79	81	60	378	61	58	63	66	43	510	248	262	117	38	345	1651
Univ of Rochester, NY	1249	317	155	162	56	124	35	2	18	32	84	258	2	256	136	274	741	1990
Carnegie-Mellon U, PA	1236	330	191	139	16	543	79	60	176	84	142	71	1	70	51	83	250	1486
Univ of Cal, Davis ..	1222	150	40	110	26	102	9	14	19	19	33	700	127	573	132	79	210	1432
Oberlin College, Ohio	1170	224	90	134	37	16	1	1	4	1	95	221	3	218	334	243	953	2123
Rice Univ, Texas ...	1168	367	225	142	57	258	57	14	84	46	151	164	2	162	107	64	295	1463
Indiana U, Bloomingtn	1155	188	79	109	74	7	0	0	2	2	49	307	11	296	304	226	1541	2696
N. C. St U, Raleigh .	1130	166	93	73	20	411	52	34	68	98	72	343	171	172	95	23	209	1339
Univ of Nebraska	1125	146	52	94	28	196	41	17	48	36	60	399	186	213	196	100	930	2055
Louisiana St Univ ...	1111	194	91	103	30	200	71	10	30	46	57	358	166	192	144	128	658	1769
Johns Hopkins U, MD .	1087	207	116	91	40	246	29	10	88	37	67	276	4	272	120	131	332	1419
Colorado State Univ .	1078	101	31	70	30	91	4	23	17	25	27	639	272	367	103	87	352	1430
Univ of Oklahoma	1071	178	102	76	63	253	50	14	50	38	63	157	7	150	196	161	742	1813
Univ of Mass, Amherst	1070	166	36	130	33	119	15	17	23	23	29	415	120	295	146	162	589	1659
Wayne State Univ, MI.	1057	196	73	123	27	133	25	12	28	30	64	203	12	191	190	244	1388	2445
Duke University, NC .	1057	195	71	124	36	126	3	19	41	27	41	297	16	281	135	227	697	1754
Univ of Pittsburgh ..	1051	179	47	132	26	204	39	10	46	39	44	234	3	231	156	208	901	1952
SUNY at Buffalo	1046	180	45	135	41	125	14	10	32	33	43	248	7	241	170	239	815	1861
Kansas State Univ ...	1040	127	57	70	27	218	25	20	51	51	47	459	219	240	122	60	458	1498
Georgia Inst of Tech.	1034	275	168	107	22	487	74	34	96	96	94	55	3	52	51	50	149	1183
Oregon State Univ ...	1030	184	51	133	71	196	49	18	39	29	54	414	166	248	64	47	355	1385
Dartmouth College, NH	1019	164	82	82	105	82	4	5	24	12	108	173	14	159	259	128	640	1659
U of NC, Chapel Hill.	1004	238	66	172	42	17	1	0	4	1	72	219	10	209	192	224	930	1934
Univ of Connecticut .	1003	157	38	119	31	150	8	22	32	39	29	351	57	294	152	133	538	1541
University of Iowa ..	973	156	75	81	25	117	24	5	33	25	72	204	9	195	192	207	913	1886
Washington Univ, MO .	960	176	88	88	45	193	43	18	33	28	57	172	2	170	145	172	570	1530
U of Cal, Santa Barb.	959	110	40	70	60	71	5	1	27	12	42	298	11	287	213	165	588	1547
University of Arizona	945	122	64	58	59	164	13	21	58	10	35	262	66	196	168	135	578	1523
VPI & State Univ	944	139	76	63	29	395	49	38	50	117	40	240	90	150	66	35	243	1187
Syracuse Univ, NY ...	939	132	44	88	40	132	21	8	31	24	23	212	7	205	205	195	869	1808
Univ of Cincinnati ..	938	172	47	125	35	262	43	12	53	46	47	169	10	159	120	133	644	1582
U of Tennessee, Knox.	935	129	75	54	12	254	35	13	61	33	36	284	134	150	126	94	610	1545
Lehigh Univ, Penn ...	883	218	94	124	40	361	70	21	64	66	60	89	6	83	53	62	161	1044
CUNY-Hunter College .	872	78	11	67	17	5	0	0	1	2	23	194	2	192	196	359	1116	1988
University of Georgia	860	94	21	73	15	30	0	0	0	1	29	399	187	212	150	143	715	1575
Swarthmore Coll, PA .	859	134	85	49	13	67	0	10	22	16	83	186	3	183	227	149	422	1281
Washington State U ..	858	116	40	76	34	126	7	17	27	19	40	330	135	195	140	72	394	1252
Polytech Inst of NY .	848	306	159	147	13	407	58	13	103	64	82	23	0	23	9	8	29	877
Temple Univ, Penn ...	843	165	48	117	18	10	0	0	3	0	55	177	3	174	171	247	967	1810

See footnotes at end of table.

Table 11. Top 300 baccalaureate institutions of new science and engineering doctorates by major field: 1960-82--con.(1)

Field of study

Institution	Total sci & eng	Physical sciences			Earth & env sci	Engineering					Math sci	Life sciences			Soc sci	Psych	Total non-sci & eng(2)	Total all flds
		Sub-total	Phys& astr	Chem-istry		Sub-total	Chem	Civil	Elec	Mech		Sub-total	Agri sci	Bio-logy				
Utah State University	831	79	38	41	22	117	0	43	23	23	18	415	203	212	128	52	574	1405
Boston University ...	827	119	35	84	34	32	0	1	1	10	21	194	4	190	166	261	1169	1996
Texas Tech University	826	85	40	45	28	206	25	25	61	44	38	275	119	156	108	86	528	1354
San Diego State Univ.	818	113	44	69	38	27	0	3	3	3	42	186	13	173	168	244	580	1398
Florida State Univ ..	794	116	61	55	61	37	0	1	7	7	60	141	7	134	206	173	1166	1960
Miami Univ, Ohio	791	153	67	86	41	21	0	0	1	2	37	212	25	187	185	142	646	1437
U of Cal, Riverside .	786	191	68	123	46	10	0	0	2	2	61	237	23	214	145	96	223	1009
Illinois Inst of Tech	776	221	101	120	7	349	57	24	96	74	75	41	1	40	39	44	93	869
SUNY at Stony Brook .	770	142	65	77	28	64	3	4	10	13	51	197	4	193	85	203	150	920
Drexel Univ, Penn ...	768	218	83	135	19	379	45	24	87	88	37	79	3	76	19	17	106	874
Fordham Univ, NY	766	220	82	138	9	7	3	0	0	0	60	149	9	140	146	175	742	1508
Auburn Univ, AL	760	103	56	47	10	201	18	16	67	38	53	260	92	168	69	64	471	1231
Tufts Univ, Mass	755	95	36	59	38	146	28	20	30	27	32	196	7	189	104	144	438	1193
West Virginia Univ ..	749	115	34	81	25	145	28	18	26	30	20	281	110	171	73	90	478	1227
Univ of Delaware	729	122	27	95	17	156	68	5	34	26	37	243	54	189	63	91	234	963
Univ of Kentucky	723	86	35	51	24	120	9	16	30	20	35	245	113	132	135	78	522	1245
San Jose State U, CA.	722	88	28	60	40	68	6	10	12	10	27	190	9	181	139	170	668	1390
Univ of Virginia	719	147	74	73	31	154	17	12	40	27	42	122	10	112	112	111	431	1150
U of Sthrn California	710	82	36	46	34	138	15	12	40	19	26	119	1	118	147	164	766	1476
Southern Ill U C'dale	707	96	15	81	26	12	0	1	2	2	43	249	92	157	155	126	912	1619
Pomona College, Cal .	674	117	74	43	52	22	2	0	6	4	62	189	12	177	135	97	343	1017
Reed College, Oregon.	668	161	90	71	14	8	0	1	2	1	94	141	3	138	154	96	194	862
Boston College	663	207	94	113	29	17	1	0	1	2	67	92	0	92	134	117	692	1355
University of Oregon.	659	95	32	63	30	12	0	1	1	2	57	138	2	136	186	141	707	1366
Manhattan College, NY	658	199	85	114	8	204	23	32	55	21	42	108	1	107	21	76	239	897
U of Ark, Fayettevill	657	71	31	40	14	150	26	14	47	23	28	250	133	117	82	62	476	1133
George Washington U .	651	77	32	45	18	56	0	3	20	14	35	124	3	121	174	167	466	1117
Univ of New Mexico ..	645	113	38	75	40	96	9	21	24	21	46	116	7	109	125	109	549	1194
Carleton Coll, Minn .	643	159	86	73	59	19	2	1	3	2	54	142	11	131	131	79	369	1012
University of Miami .	642	82	28	54	35	67	0	9	18	18	38	178	13	165	60	182	603	1245
Brandeis Univ, Mass .	638	84	43	41	5	3	0	0	0	0	34	150	2	148	162	200	378	1016
Vanderbilt Univ, Tenn	634	118	48	70	20	162	41	13	47	15	43	118	6	112	70	103	329	963
University of Alabama	627	116	42	74	18	119	14	8	26	24	51	138	6	132	83	102	761	1388
Mississippi State U .	626	68	26	42	16	178	12	20	54	32	15	246	129	117	68	35	364	990
U of Missouri, Rolla.	615	135	83	52	38	382	58	46	72	70	25	19	1	18	6	10	30	645
Ohio University	603	116	39	77	25	90	16	13	34	7	22	131	16	115	95	124	670	1273
St Louis University .	598	107	38	69	37	63	1	3	20	7	54	85	3	82	107	145	568	1166
Amherst College, Mass	591	123	73	50	61	15	3	1	1	4	34	140	4	136	144	74	442	1033
Marquette Univ, Wis .	589	99	33	66	7	153	2	15	44	27	40	104	6	98	73	113	442	1031
University of Houston	587	67	30	37	15	89	19	5	23	24	36	109	3	106	85	186	424	1011
Columbia-Barnard, NY.	582	51	21	30	7	1	0	0	0	0	25	125	1	124	167	206	616	1198
Loyola U of Chicago .	582	120	34	86	5	8	0	0	0	0	19	143	5	138	64	223	466	1048
Northeastern U, Mass.	578	128	36	92	10	176	33	11	45	31	16	118	2	116	78	52	263	841
Univ of Maine, Orono.	574	84	44	40	16	87	22	8	16	9	18	264	108	156	54	51	300	874
Arizona State Univ ..	573	82	21	61	16	67	8	5	16	11	25	145	26	119	111	127	623	1196
Tulane U of Louisiana	558	104	48	56	19	101	31	12	15	24	44	114	5	109	75	101	253	811
Antioch College, Ohio	555	65	35	30	26	14	0	1	2	0	33	112	7	105	139	166	271	826
Cal St U, Long Beach.	550	75	30	45	10	17	0	3	4	4	21	169	13	156	118	140	502	1052
Cooper Union, NY	538	94	74	20	6	376	93	38	81	94	32	16	0	16	6	8	20	558
Montana State Univ ..	535	87	50	37	16	115	41	9	35	10	25	188	71	117	68	36	146	681
Univ of Rhode Island.	530	99	27	72	29	81	12	6	23	18	12	219	54	165	52	38	212	742
Union University, NY.	525	171	76	95	37	74	0	11	21	14	39	92	0	92	48	64	205	730
U of New Hampshire ..	522	89	28	61	44	64	13	12	16	11	19	208	62	146	48	50	268	790
William & Mary, VA ..	517	118	46	72	16	15	3	1	1	0	30	131	7	124	97	110	363	880
University of Idaho..	512	55	14	41	27	98	17	15	21	14	20	227	113	114	54	31	276	786
Bucknell Univ, Penn .	506	102	21	81	23	58	14	7	13	11	35	110	2	108	76	102	218	724
San Francisco St Univ	506	38	8	30	8	9	0	2	2	1	14	122	3	119	148	167	644	1150
Kent State Univ, OH .	505	86	17	69	30	6	0	0	1	1	21	132	9	123	107	123	666	1171
University of Hawaii.	505	62	14	48	14	37	0	11	10	7	12	178	45	133	109	93	304	809
Franklin&Marshall, PA	501	130	32	98	91	12	0	0	2	0	24	86	2	84	75	83	155	656
U of Cal, San Diego .	501	94	30	64	47	27	0	1	2	3	34	214	1	213	44	41	55	556
Emory University, GA.	494	106	20	86	14	7	0	0	0	0	31	119	5	114	90	127	347	841
SUNY at Binghamton ..	484	91	27	64	30	6	1	0	0	0	32	84	1	83	117	124	233	717
Sthrn Methodist U, TX	477	61	29	32	30	88	0	6	37	27	44	62	4	58	94	98	373	850
Coll of Wooster, Ohio	463	139	24	115	42	6	1	0	2	2	28	106	9	97	75	67	348	811
US Naval Academy, MD.	463	62	52	10	31	230	0	13	48	30	38	18	4	14	62	22	270	733
Radcliffe Coll, Mass.	462	36	19	17	4	1	0	0	0	0	20	104	1	103	150	147	465	927
University of Wyoming	462	57	21	36	33	70	1	20	16	11	20	180	67	113	66	36	235	697
Clemson Univ, SC	460	71	35	36	11	153	29	5	30	29	18	148	63	85	44	15	152	612
Occidental Coll, Cal.	459	102	42	60	33	16	0	0	8	2	18	84	5	79	95	111	300	759
Cal State Univ, L.A..	457	44	20	24	19	21	1	3	8	3	5	87	5	82	131	150	656	1113
SUNY at Albany	456	109	31	78	18	8	2	0	1	1	28	150	4	146	73	70	529	985
Villanova Univ, Penn.	456	159	57	102	10	105	30	12	25	15	22	76	1	75	36	48	238	694
Wesleyan Univ, Conn .	452	100	55	45	18	6	1	0	4	0	36	80	0	80	104	108	381	833
Wellesley Coll, Mass.	451	36	21	15	7	0	0	0	0	0	14	119	2	117	138	137	568	1019
Williams College, MA.	449	128	65	63	34	17	1	0	5	2	25	80	3	77	116	49	312	761
US Military Academy .	443	55	46	9	11	216	0	60	33	35	18	6	0	6	114	23	310	753
University of Dayton.	439	81	27	54	20	104	32	3	22	14	56	81	2	79	25	72	301	740
Baylor Univ, Texas ..	438	94	48	46	20	8	0	0	5	2	19	92	5	87	83	122	821	1259
Lafayette Coll, Penn.	432	114	37	77	40	32	13	5	12	12	29	68	3	65	35	64	156	588

See footnotes at end of table.

Table 11. Top 300 baccalaureate institutions of new science and engineering doctorates by major field: 1960-82--con.(1)

	Field of study																
		Physical sciences				Engineering						Life sciences					Total
Institution	Total sci & eng	Sub-total	Phys& astr	Chem-istry	Earth & env sci	Sub-total	Chem	Civil	Elec	Mech	Math sci	Sub-total	Agri sci	Bio-logy	Soc sci	Psych	non-sci & eng(2)	Total all flds
Georgetown Univ, DC .	424	67	41	26	7	6	0	0	1	0	27	72	1	71	196	49	360	784
Univ of Vermont	422	66	14	52	10	37	0	8	8	13	12	182	50	132	42	73	189	611
Grinnell Coll, Iowa .	422	102	35	67	9	8	1	0	2	1	17	99	3	96	110	77	257	679
Cal St Univ, Fresno .	419	83	24	59	18	22	0	2	10	3	22	132	33	99	76	66	370	789
Depauw Univ, Indiana.	417	83	18	65	22	11	0	1	2	0	34	88	3	85	59	120	306	723
University of Detroit	417	86	32	54	3	148	28	8	31	45	31	53	2	51	43	53	276	693
Michigan Tech Univ ..	404	76	31	45	41	217	16	24	33	44	14	49	21	28	5	2	27	431
N Texas State Univ ..	404	89	49	40	4	14	0	1	1	1	33	89	4	85	81	94	910	1314
Hofstra Univ, NY	401	65	25	40	11	9	0	0	0	0	22	63	2	61	47	184	242	643
New Mexico State Univ	399	61	40	21	4	96	6	14	28	23	21	151	76	75	36	30	129	528
Catholic U Amer, DC .	398	82	43	39	3	69	5	5	15	15	22	65	0	65	66	91	428	826
Western Michigan Univ	396	73	15	58	16	12	1	1	1	3	18	83	8	75	82	112	776	1172
Smith College, Mass .	394	24	8	16	9	1	0	0	0	0	15	111	3	108	116	118	542	936
St Johns Univ, NY ...	392	114	13	101	2	1	0	0	0	0	16	118	2	116	41	100	439	831
North Dakota St Univ.	391	73	10	63	3	56	0	9	16	12	10	173	80	93	56	20	128	519
St Olaf College, MN .	387	157	52	105	4	7	0	0	1	1	20	102	9	93	48	49	364	751
Worcester Poly In, MA	383	144	73	71	6	180	30	20	42	34	22	19	0	19	7	5	18	401
Univ of Puerto Rico .	382	69	18	51	7	59	11	17	10	6	8	115	39	76	71	53	335	717
University of Denver.	376	52	21	31	3	44	13	6	14	5	13	70	4	66	91	103	514	890
Wheaton College, Ill.	374	74	28	46	17	8	1	1	3	0	20	74	6	68	97	84	565	939
U of Illinois, C Cir.	372	71	23	48	5	53	4	3	6	16	20	109	0	109	48	66	137	509
Haverford Coll, Penn.	371	97	49	48	8	10	0	2	3	1	28	92	2	90	89	47	247	618
South Dakota State U.	366	52	30	22	3	48	0	11	10	6	6	184	93	91	63	10	151	517
Mt Holyoke Coll, MA .	364	59	17	42	10	3	0	0	1	0	11	120	0	120	69	92	321	685
Northern Ill Univ ...	364	78	16	62	19	10	0	0	3	0	12	100	6	94	74	71	609	973
University of Montana	361	41	10	31	24	6	0	1	1	1	14	149	46	103	72	55	308	669
Bowling Green S U, OH	357	76	10	66	20	5	0	0	0	0	20	101	9	92	79	56	541	898
Calvin College, MI ..	355	106	33	73	7	12	0	0	3	6	33	86	6	80	47	64	389	744
Clark University, MA.	352	60	11	49	7	3	0	0	1	0	13	69	1	68	83	117	164	516
Stevens Inst Tech, NY	352	147	98	49	4	124	17	4	27	34	36	15	0	15	7	19	19	371
Howard University, DC	352	61	16	45	2	41	0	9	13	12	11	103	7	96	71	63	358	710
Cal St U, Northridge.	351	36	18	18	14	12	0	0	2	4	8	87	4	83	71	123	278	629
Univ of Cal, Irvine .	351	80	35	45	4	12	0	1	6	0	16	164	4	160	30	45	99	450
Univ of WI, Milwauke.	348	69	25	44	24	24	1	1	3	2	25	62	5	57	78	66	266	614
Vassar College, NY ..	347	29	13	16	5	2	0	0	0	1	17	90	2	88	87	117	369	716
Ohio Wesleyan Univ ..	347	62	24	38	22	14	3	1	4	2	18	94	2	92	74	63	311	658
University of S.C. ..	344	64	24	40	9	65	19	7	18	15	16	59	5	54	53	78	345	689
Cal Polytechnic St U.	342	28	6	22	10	63	0	5	20	9	16	191	110	81	25	9	107	449
Col of Holy Cross, MA	340	102	35	67	5	10	0	0	1	3	44	60	2	58	62	57	321	661
Clarkson C Tech, NY .	336	137	35	102	3	150	48	9	29	26	15	12	0	12	10	9	34	370
Colgate Univ, NY	319	53	22	31	36	7	1	0	2	0	10	73	6	67	63	77	309	628
Yeshiva Univ, NY	315	75	33	42	1	10	1	0	0	1	64	47	0	47	36	82	217	532
Valparaiso Univ, IN .	314	63	23	40	10	52	0	8	18	12	21	54	3	51	70	44	204	518
Bowdoin College, ME .	311	79	31	48	18	16	0	1	4	3	27	67	5	62	50	54	216	527
Knox College, Ill ...	311	73	19	54	13	5	0	1	0	0	31	78	2	76	63	48	170	481
Univ of South Florida	310	57	19	38	7	17	1	2	4	2	30	71	6	65	46	82	273	583
St. Josephs Univ, PA.	308	138	66	72	3	12	1	0	2	0	17	58	2	56	40	40	147	455
Univ of Louisville ..	308	73	19	54	5	69	30	7	20	5	12	74	1	73	29	46	227	535
Wake Forest Univ, NC.	306	57	19	38	2	7	1	0	2	2	19	105	3	102	56	60	380	686
Earlham College, IN .	304	66	25	41	22	4	0	0	1	1	13	115	8	107	44	40	175	479
U of Cal, Santa Cruz.	303	40	16	24	16	2	0	0	0	0	16	100	8	92	54	75	100	403
U of North Dakota ...	301	61	21	40	15	44	10	7	13	4	20	55	5	50	44	62	270	571
Hope College, MI	300	115	18	97	3	1	0	0	0	0	13	90	2	88	27	51	231	531
Wichita St Univ, KS .	297	69	24	45	6	50	1	0	16	17	17	27	2	25	66	62	320	617
Bryn Mawr Coll, Penn.	295	43	9	34	8	3	0	0	0	0	11	81	0	81	108	41	296	591
Cal St U, Sacramento.	294	37	8	29	5	20	0	4	5	3	13	59	3	56	83	77	284	578
Harvey Mudd Coll, Cal	294	139	70	69	15	55	5	2	15	6	52	20	0	20	7	6	12	306
Denison Univ, Ohio ..	292	48	16	32	15	4	0	0	0	1	11	61	3	58	54	99	211	503
Wabash College, IN ..	292	87	29	58	3	8	0	0	1	0	18	103	4	99	47	26	167	459
Providence Coll, RI .	291	115	25	90	2	1	0	0	0	0	12	87	2	85	45	29	247	538
Davidson College, NC.	289	87	22	65	5	9	0	0	2	1	36	47	0	47	56	49	305	594
Kalamazoo Coll, Mich.	287	99	34	65	8	10	2	0	1	0	9	85	3	82	52	24	133	420
Middlebury Coll, VT .	286	55	20	35	28	13	1	0	1	4	13	72	5	67	68	37	275	561
La Salle Coll, Penn .	284	94	28	66	4	6	1	0	0	0	16	60	3	57	53	51	276	560
U of Southwestern LA.	284	48	21	27	6	42	11	0	7	8	28	90	30	60	37	33	239	523
Trinity College, Conn	277	67	21	46	9	10	0	1	5	1	21	45	1	44	44	81	198	465
Allegheny College, PA	277	75	16	59	24	5	2	1	0	0	12	59	0	59	36	66	186	463
Louisiana Tech Univ .	276	52	34	18	3	77	15	5	17	20	26	77	30	47	25	16	279	555
Roosevelt Univ, Ill .	275	24	5	19	1	2	0	0	1	0	9	66	0	66	57	116	288	563
Beloit College, Wis .	275	46	21	25	35	5	0	0	1	2	12	62	6	56	85	30	143	418
Colorado Sch of Mines	275	40	21	19	87	126	32	6	1	7	8	3	1	2	10	1	9	284
Macalester Coll, MN .	274	50	11	39	8	2	0	0	0	0	15	61	3	58	75	63	216	490
American Univ, DC ...	273	39	9	30	5	4	0	0	0	1	9	39	0	39	106	71	246	519
Alfred University, NY	272	49	16	33	7	116	0	0	2	0	8	27	1	26	27	38	75	347
Bradley Univ, Ill ...	272	53	7	46	5	55	0	7	17	21	13	41	0	41	43	62	188	460
Gettysburg Coll, Penn	271	90	40	50	2	8	0	0	1	0	9	96	9	87	15	51	229	500
Univ of Toledo, Ohio.	267	72	24	48	9	54	6	4	12	10	14	56	2	54	26	36	249	516
Portland St U, Oregon	263	49	18	31	14	5	0	0	0	0	28	56	2	54	63	48	215	478
Lawrence Univ, Wis ..	262	47	12	35	19	6	1	0	1	1	10	63	2	61	61	56	225	487
Xavier Univ, Ohio ..	261	105	38	67	2	7	0	0	1	1	26	27	1	26	36	58	185	446

See footnotes at end of table.

Table 11. Top 300 baccalaureate institutions of new science and engineering doctorates by major field: 1960-1982--con.(1)

		Field of study																
		Physical sciences				Engineering						Life sciences					Total	
Institution	Total sci & eng	Sub-total	Phys& astr	Chem-istry	Earth & env sci	Sub-total	Chem	Civil	Elec	Mech	Math sci	Sub-total	Agri sci	Bio-logy	Soc sci	Psych	non-sci & eng(2)	Total all flds
Univ of Akron, OH ...	259	76	18	58	5	41	2	9	9	7	16	40	3	37	39	42	217	476
Texas Christian Univ.	255	62	25	37	17	3	0	0	0	1	24	38	0	38	51	60	356	611
Univ of Mississippi .	254	42	10	32	3	42	13	8	10	7	24	65	3	62	44	34	311	565
Lamar University, TX.	254	62	31	31	14	73	17	3	16	22	14	54	5	49	21	16	197	451
U of Santa Clara, CA.	254	55	30	25	5	48	0	4	23	10	28	35	0	35	58	25	117	371
Colorado College	252	51	14	37	23	7	0	2	1	2	13	72	4	68	47	39	134	386
New Jersey Inst Tech.	249	18	13	5	4	205	50	12	55	42	13	4	0	4	3	2	27	276
Canisius College, NY.	246	122	34	88	3	6	0	0	0	0	12	42	1	41	32	29	160	406
Muhlenberg Coll, PA .	246	85	27	58	2	3	0	0	0	0	5	109	6	103	11	31	145	391
Hamilton College, NY.	245	48	20	28	18	6	0	0	2	1	14	45	1	44	51	63	235	480
Memphis State U, TN .	245	56	12	44	4	9	0	1	2	0	7	76	4	72	45	48	347	592
Adelphi Univ, NY	242	28	7	21	0	5	0	0	1	0	7	53	2	51	20	129	203	445
Duquesne Univ, PA ...	242	61	13	48	2	1	0	0	0	0	12	72	3	69	29	65	360	602
Humboldt State U, CA.	238	21	8	13	14	5	0	3	0	0	7	142	46	96	20	29	72	310
Depaul Univ, Ill	234	83	38	45	2	3	0	0	2	0	16	33	0	33	42	55	267	501
St Lawrence Univ, NY.	233	50	15	35	32	7	0	0	1	1	9	60	6	54	32	43	156	389
Seton Hall Univ, NJ .	231	70	6	64	1	1	1	0	0	0	13	48	3	45	21	77	330	561
U of Missouri, Ks Cit	230	42	12	30	9	3	0	0	0	0	20	50	3	47	47	59	228	458
U of Tex, Arlington .	230	44	25	19	10	52	0	4	22	8	25	49	5	44	25	25	93	323
John Carroll Univ, OH	229	101	49	52	3	8	1	0	0	1	14	34	1	33	23	46	194	423
Augustana Coll, Ill .	227	59	6	53	37	2	1	0	1	0	12	40	1	39	41	36	196	423
Illinois State Univ .	227	20	5	15	7	5	2	0	0	0	17	60	14	46	88	30	617	844
Univ of Richmond, VA.	226	62	27	35	6	2	0	0	0	0	10	57	2	55	42	47	231	457
Berea College, KY ...	221	56	28	28	6	5	0	0	1	2	9	85	43	42	44	16	181	402
Western Washington U.	220	45	9	36	12	4	0	0	2	0	17	52	0	52	40	50	256	476
U of San Francisco ..	219	55	21	34	1	5	0	0	1	1	14	51	2	49	36	57	166	385
St Peters Coll, NJ ..	218	77	12	65	2	2	0	0	1	0	23	47	1	46	29	38	148	366
Cal St U, Fullerton .	217	23	7	16	2	2	0	1	0	1	6	52	3	49	58	74	116	333
Univ of Redlands, CA.	217	32	9	23	13	8	0	0	3	2	10	45	2	43	46	63	262	479
Western Illinois U ..	216	38	12	26	2	3	0	0	1	0	8	87	30	57	45	33	293	509
Bates College, Maine.	215	59	17	42	13	1	0	0	1	0	8	69	3	66	35	30	166	381
SUNY Envr Sci Frstry.	211	37	0	37	7	10	0	2	0	1	0	147	64	83	8	2	14	225
Univ of Lowell, Mass.	210	110	42	68	8	67	10	2	12	22	6	14	1	13	5	0	65	275
St Johns Univ, Minn .	209	74	34	40	2	3	0	0	0	0	22	49	4	45	34	25	149	358
Whitman College, WA .	209	44	23	21	6	7	1	0	1	1	17	56	3	53	43	36	114	323
Juniata College, Penn	207	70	5	65	14	2	0	0	1	0	4	88	2	86	11	18	108	315
U of Scranton, Penn .	207	69	31	38	4	4	0	0	2	0	0	70	0	70	14	46	135	342
Cal St Univ, Chico ..	207	25	7	18	10	20	0	5	9	3	7	67	15	52	45	33	174	381
Col of St Thomas, MN.	204	82	14	68	3	7	1	0	1	1	17	56	1	55	22	17	121	325
Wittenberg Univ, Ohio	203	47	13	34	13	0	0	0	0	0	7	53	2	51	43	40	207	410
Eastern Illinois Univ	203	48	22	26	5	3	0	0	1	0	10	99	28	71	26	12	321	524
University of Nevada.	203	41	17	24	16	22	2	3	5	4	13	60	13	47	25	26	128	331
Drew University, NJ .	202	47	12	35	2	1	0	0	0	0	7	69	4	65	37	39	95	297
Concordia-Moorhead,MN	202	36	21	15	2	5	1	0	1	2	26	66	2	64	26	41	182	384
Fairleigh Dickn U, NJ	199	60	16	44	1	20	0	0	6	2	11	59	1	58	13	35	112	311
University of Tulsa .	199	27	12	15	26	54	21	1	1	11	11	32	2	30	18	31	218	417
Cleveland St Univ, OH	198	39	16	23	3	64	12	3	17	13	7	35	1	34	20	30	78	276
Albion College, Mich.	196	44	12	32	4	6	0	0	0	0	7	79	4	75	25	31	167	363
Western Kentucky Univ	196	46	15	31	0	4	0	0	0	0	11	78	38	40	34	23	254	450
USAF Academy, Col ...	196	24	20	4	1	88	0	5	8	17	16	10	0	10	41	16	64	260
Kenyon College, Ohio.	193	46	13	33	3	1	1	0	0	0	27	49	2	47	35	32	144	337
Gonzaga Univ, WA	192	28	13	15	4	32	13	4	5	4	12	32	1	31	34	50	199	391
S Dakota S Mine&Tech.	191	47	18	29	22	91	9	7	25	14	23	8	1	7	0	0	6	197
Tennessee Tech Univ .	191	20	7	13	1	62	6	9	10	16	10	76	36	40	14	8	132	323
Emporia St Univ, KS .	188	50	13	37	4	3	0	0	0	0	15	71	2	69	28	17	419	607
U of Southern Miss ..	183	46	5	41	7	3	0	0	1	0	14	44	3	41	27	42	454	637
Fairfield Univ, Conn.	182	46	15	31	3	2	0	0	0	0	6	45	2	43	24	56	113	295
Millsaps Coll, Miss .	182	37	6	31	8	2	0	0	0	0	5	54	5	49	38	38	151	333
U of Wis, Stevens Pt.	181	41	4	37	3	1	0	0	0	1	5	87	27	60	31	13	133	314
St Mary's College, MN	181	69	28	41	2	4	0	0	3	0	14	46	1	45	25	21	150	331
U of Cal, Davis	181	19	9	10	0	31	5	4	2	7	8	80	25	55	35	9	59	240

(1) The top 300 institutions are ranked according to S/E baccalaureate production (column 1).

(2) Non-science/engineering doctorates in this table include doctorates whose field of specialization is unknown.

SOURCES: National Science Foundation and National Research Council

Table 12. New science and engineering doctorates with definite postgraduation employment or study commitments in the United States by major field and citizenship status: for selected years (1)

		Field of doctorate															
		Physical sciences				Engineering						Life sciences					
Postgraduation plans	Total sci & eng	Sub-total	Phys& astr	Chem-istry	Earth & env sci	Sub-total	Chem	Civil	Elec	Mech	Math sci	Sub-total	Agri sci	Bio-logy	Soc sci	Psych	Total non-sci & eng(2)	Total all flds
Year of doctorate - 1970																		
Total	11789	2615	1019	1596	345	2178	300	173	536	412	820	2724	424	2300	1798	1309	8074	19863
U.S. citizens	10594	2329	894	1435	305	1860	249	130	454	367	744	2468	386	2082	1622	1266	7788	18382
Employment	8278	1511	573	938	250	1773	241	127	433	353	702	1393	347	1046	1558	1091	7625	15903
Study	2299	817	321	496	55	84	8	3	20	13	41	1067	38	1029	61	174	125	2424
Other, no report	17	1	0	1	0	3	0	0	1	1	1	8	1	7	3	1	38	55
Non-US citizens, ttl	1180	281	124	157	39	317	51	43	81	45	75	254	38	216	174	40	276	1456
Employment	707	102	49	53	20	258	42	34	71	43	64	73	14	59	162	28	247	954
Study	469	177	75	102	19	58	9	5	10	2	11	181	24	157	11	12	25	494
Other, no report	4	2	0	2	0	1	0	1	0	0	0	0	0	0	1	0	4	8
Permanent residents	604	125	46	79	19	186	34	21	46	32	31	113	14	99	106	24	186	790
Employment	428	60	24	36	14	162	29	19	41	31	29	46	10	36	101	16	173	601
Study	174	64	22	42	5	23	5	1	5	1	2	67	4	63	5	8	12	186
Other, no report	2	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	1	3
Temporary residents	576	156	78	78	20	131	17	22	35	13	44	141	24	117	68	16	90	666
Employment	279	42	25	17	6	96	13	15	30	12	35	27	4	23	61	12	74	353
Study	295	113	53	60	14	35	4	7	5	1	9	114	20	94	6	4	13	308
Other, no report	2	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	3	5
Unknown citizenship.	15	5	1	4	1	1	0	0	1	0	1	2	0	2	2	3	10	25
Year of doctorate - 1972																		
Total	11687	2156	926	1230	391	2039	215	199	473	365	772	2648	377	2271	2173	1508	9372	21059
U.S. citizens	10525	1900	813	1087	357	1687	180	143	402	300	696	2427	344	2083	1995	1463	9015	19560
Employment	7921	969	463	506	283	1571	168	138	372	281	658	1272	306	966	1916	1252	8737	16658
Study	2533	921	344	577	70	108	12	5	29	19	36	1142	35	1107	58	198	166	2699
Other, no report	71	10	6	4	4	8	0	0	1	0	2	13	3	10	21	13	112	183
Non-US citizens, ttl	1158	255	112	143	34	351	35	56	70	65	76	221	33	188	177	44	343	1501
Employment	612	55	27	28	23	222	19	42	49	43	57	53	15	38	165	37	312	924
Study	539	199	84	115	11	127	16	13	21	22	19	165	17	148	11	7	29	568
Other, no report	7	1	1	0	0	2	0	1	0	0	0	3	1	2	1	0	2	9
Permanent residents	750	150	48	102	24	258	28	39	54	55	34	138	20	118	115	31	259	1009
Employment	458	45	20	25	17	184	19	31	42	39	31	43	12	31	112	26	241	699
Study	288	105	28	77	7	72	9	7	12	16	3	94	7	87	2	5	16	304
Other, no report	4	0	0	0	0	2	0	1	0	0	0	1	1	0	1	0	2	6
Temporary residents	408	105	64	41	10	93	7	17	16	10	42	83	13	70	62	13	84	492
Employment	154	10	7	3	6	38	0	11	7	4	26	10	3	7	53	11	71	225
Study	251	94	56	38	4	55	7	6	9	6	16	71	10	61	9	2	13	264
Other, no report	3	1	1	0	0	0	0	0	0	0	0	2	0	2	0	0	0	3
Unknown citizenship.	4	1	1	0	0	1	0	0	1	0	0	0	0	0	1	1	14	18
Year of doctorate - 1974																		
Total	10636	1830	704	1126	367	1758	224	159	387	309	621	2455	362	2093	1976	1629	9016	19652
U.S. citizens	9294	1571	591	980	321	1286	147	98	288	226	544	2193	320	1873	1802	1577	8681	17975
Employment	7144	887	321	566	271	1211	140	93	268	218	514	1169	282	887	1735	1357	8406	15550
Study	2130	683	270	413	49	74	7	5	19	8	29	1020	36	984	58	217	200	2330
Other, no report	20	1	0	1	1	1	0	0	1	0	1	4	2	2	9	3	75	95
Non-US citizens, ttl	1324	258	113	145	44	470	77	61	98	83	77	258	41	217	167	50	316	1640
Employment	757	51	19	32	23	370	65	56	80	63	62	65	19	46	148	38	285	1042
Study	562	207	94	113	21	98	11	5	18	19	15	192	22	170	17	12	23	585
Other, no report	5	0	0	0	0	2	1	0	0	1	0	1	0	1	2	0	8	13
Permanent residents	702	120	45	75	28	276	48	32	60	53	27	137	19	118	91	23	222	924
Employment	465	41	15	26	17	241	43	31	50	48	23	43	12	31	82	18	202	667
Study	233	79	30	49	11	33	4	1	10	4	4	93	7	86	8	5	13	246
Other, no report	4	0	0	0	0	2	1	0	0	1	0	1	0	1	1	0	7	11
Temporary residents	622	138	68	70	16	194	29	29	38	30	50	121	22	99	76	27	94	716
Employment	292	10	4	6	6	129	22	25	30	15	39	22	7	15	66	20	83	375
Study	329	128	64	64	10	65	7	4	8	15	11	99	15	84	9	7	10	339
Other, no report	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
Unknown citizenship.	18	1	0	1	2	2	0	0	1	0	0	4	1	3	7	2	19	37

See footnotes at end of table.

Table 12. New science and engineering doctorates with definite postgraduation employment or study commitments in the United States by major field and citizenship status: for selected years(1)--con.

Field of doctorate

Postgraduation plans	Total sci & eng	Physical sciences			Earth & env sci	Engineering					Math sci	Life sciences			Soc sci	Psych	Total non-sci & eng(2)	Total all flds
		Sub-total	Phys& astr	Chem-istry		Sub-total	Chem	Civil	Elec	Mech		Sub-total	Agri sci	Bio-logy				
Year of doctorate - 1976																		
Total	10695	1737	653	1084	399	1617	205	143	331	227	570	2692	364	2328	1892	1788	9131	19826
U.S. citizens	9472	1431	552	929	359	1175	131	91	240	175	505	2463	340	2123	1745	1744	8798	18270
Employment	6674	718	266	452	266	1050	121	84	214	170	469	1054	285	769	1656	1461	8500	15174
Study	2737	758	284	474	88	121	10	7	26	5	34	1389	52	1337	76	271	187	2924
Other, no report	61	5	2	3	5	4	0	0	0	0	2	20	3	17	13	12	111	172
Non-US citizens, ttl	1210	255	101	154	40	441	74	52	91	52	64	227	23	204	144	39	295	1505
Employment	660	59	21	38	19	323	53	45	65	39	53	47	12	35	134	25	263	923
Study	541	195	79	116	21	114	18	7	26	12	10	178	10	168	9	14	30	571
Other, no report	9	1	1	0	0	4	3	0	0	1	1	2	1	1	1	0	2	11
Permanent residents	577	112	31	81	18	207	36	30	41	28	25	115	10	105	79	21	194	771
Employment	373	45	14	31	9	177	29	28	36	25	23	30	6	24	78	16	176	554
Study	196	67	17	50	9	28	5	2	5	3	1	85	4	81	1	5	16	212
Other, no report	3	0	0	0	0	2	2	0	0	0	1	0	0	0	0	0	2	5
Temporary residents	633	143	70	73	22	234	38	22	50	24	39	112	13	99	65	18	101	734
Employment	282	14	7	7	10	146	24	17	29	14	30	17	6	11	56	9	87	369
Study	345	128	62	66	12	86	13	5	21	9	9	93	6	87	8	9	14	359
Other, no report	6	1	1	0	0	2	1	0	0	1	0	2	1	1	1	0	0	6
Unknown citizenship.	13	1	0	1	0	1	0	0	0	0	1	2	1	1	3	5	38	51
Year of doctorate - 1978																		
Total	10225	1687	664	1023	400	1440	175	107	264	219	585	2678	414	2264	1665	1770	8010	18235
U.S. citizens	8980	1417	553	864	373	980	114	67	178	137	494	2469	374	2095	1522	1725	7718	16698
Employment	6091	747	271	476	268	884	105	65	161	125	449	964	334	630	1398	1381	7450	13541
Study	2854	667	282	385	104	92	9	1	17	12	45	1500	40	1460	110	336	210	3064
Other, no report	35	3	0	3	1	4	0	1	0	0	0	5	0	5	14	8	58	93
Non-US citizens, ttl	1231	268	111	157	27	457	61	40	86	81	90	207	40	167	141	41	284	1515
Employment	697	80	33	47	16	324	47	30	71	56	68	44	19	25	131	34	258	955
Study	529	188	78	110	10	131	14	10	15	25	22	163	21	142	8	7	22	551
Other, no report	5	0	0	0	1	2	0	0	0	0	0	0	0	0	2	0	4	9
Permanent residents	522	96	32	64	12	203	31	16	37	38	27	90	23	67	63	31	163	685
Employment	375	43	17	26	9	178	30	14	34	35	23	34	15	19	60	28	153	528
Study	143	53	15	38	2	23	1	2	3	3	4	56	8	48	2	3	7	150
Other, no report	4	0	0	0	1	2	0	0	0	0	0	0	0	0	1	0	3	7
Temporary residents	709	172	79	93	15	254	30	24	49	43	63	117	17	100	78	10	121	830
Employment	322	37	16	21	7	146	17	16	37	21	45	10	4	6	71	6	105	427
Study	386	135	63	72	8	108	13	8	12	22	18	107	13	94	6	4	15	401
Other, no report	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
Unknown citizenship.	14	2	0	2	0	3	0	0	0	1	1	2	0	2	2	4	8	22
Year of doctorate - 1980																		
Total	10737	1713	632	1081	425	1520	193	116	312	232	621	2938	421	2517	1602	1918	8180	18917
U.S. citizens	9377	1437	522	915	385	974	106	72	202	143	512	2726	388	2338	1475	1868	7913	17290
Employment	6347	840	267	573	275	908	101	70	189	135	465	973	323	650	1372	1514	7659	14006
Study	3008	595	255	340	110	64	5	2	13	7	46	1745	63	1682	100	348	223	3231
Other, no report	22	2	0	2	0	2	0	0	0	1	1	8	2	6	3	6	31	53
Non-US citizens, ttl	1356	274	109	165	40	545	87	43	110	89	109	212	33	179	127	49	261	1617
Employment	794	85	31	54	16	417	70	32	88	67	88	44	19	25	108	36	224	1018
Study	555	188	77	111	24	126	17	11	21	22	20	166	14	152	18	13	36	591
Other, no report	7	1	1	0	0	2	0	0	1	0	1	2	0	2	1	0	1	8
Permanent residents	546	94	33	61	18	198	32	15	38	37	44	98	15	83	64	30	165	711
Employment	396	53	19	34	8	187	30	13	36	34	39	27	10	17	58	24	152	548
Study	150	41	14	27	10	11	2	2	2	3	5	71	5	66	6	6	12	162
Other, no report	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Temporary residents	810	180	76	104	22	347	55	28	72	52	65	114	18	96	63	19	96	906
Employment	398	32	12	20	8	230	40	19	52	33	49	17	9	8	50	12	72	470
Study	405	147	63	84	14	115	15	9	19	19	15	95	9	86	12	7	24	429
Other, no report	7	1	1	0	0	2	0	0	1	0	1	2	0	2	1	0	0	7
Unknown citizenship.	4	2	1	1	0	1	0	1	0	0	0	0	0	0	0	1	6	10

See footnotes at end of table.

Table 12. New science and engineering doctorates with definite postgraduation employment or study commitments in the United States by major field and citizenship status: for selected years(1)--con.

	Field of doctorate																
		Physical sciences				Engineering						Life sciences					
Postgraduation plans	Total sci & eng	Sub-total	Phys& astr	Chem-istry	Earth & env sci	Sub-total	Chem	Civil	Elec	Mech	Math sci	Sub-total	Agri sci	Bio-logy	Soc sci	Psych	Total non-sci & eng(2)	Total all flds
Year of doctorate - 1982																		
Total	10400	1781	611	1170	425	1427	193	132	315	251	570	2943	454	2489	1414	1840	7702	18102
U.S. citizens	8986	1507	496	1011	379	857	107	79	177	147	442	2741	423	2318	1253	1807	7399	16385
Employment	6038	929	282	647	288	801	104	79	169	137	382	971	354	617	1167	1500	7180	13218
Study	2935	577	213	364	91	56	3	0	8	10	59	1764	69	1695	85	303	196	3131
Other, no report	13	1	1	0	0	0	0	0	0	0	1	6	0	6	1	4	23	36
Non-US citizens, ttl	1375	271	114	157	46	560	85	53	135	103	125	193	31	162	154	25	278	1653
Employment	868	93	33	60	29	462	76	42	112	85	104	35	13	22	128	17	245	1113
Study	501	177	80	97	17	95	9	10	22	18	21	158	18	140	25	8	32	533
Other, no report	6	1	1	0	0	3	0	1	1	0	0	0	0	0	1	1	1	7
Permanent residents	481	64	18	46	20	191	28	11	43	46	32	81	6	75	75	18	160	641
Employment	359	38	9	29	15	180	27	11	37	44	29	18	4	14	65	14	148	507
Study	119	25	8	17	5	11	1	0	6	2	3	63	2	61	9	3	11	130
Other, no report	3	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	4
Temporary residents	894	207	96	111	26	369	57	42	92	57	93	112	25	87	79	8	118	1012
Employment	509	55	24	31	14	282	49	31	75	41	75	17	9	8	63	3	97	606
Study	382	152	72	80	12	84	8	10	16	16	18	95	16	79	16	5	21	403
Other, no report	3	0	0	0	0	3	0	1	1	0	0	0	0	0	0	0	0	3
Unknown citizenship.	39	3	1	2	0	10	1	0	3	1	3	9	0	9	7	7	25	64

(1) Only doctorates with definite postdoctoral study or employment commitments in the United States are reported here. A "definite commitment" is defined as having a signed contract, formal offer, etc.

(2) Non-science/engineering doctorates in this table include doctorates whose field of specialization is unknown.

SOURCES: National Science Foundation and National Research Council

Table 13. Distribution of new science and engineering doctorates with definite employment commitments in the United States by employment sector, major field, and sex: 1960-82(1)

Total, male and female

	Year of doctorate												
Employment sector	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	Total 1960-69	1970	1971
Total, science and engineering													
College/university .	2015	2121	2280	2519	2924	3354	3609	4291	4885	4827	32825	5109	5444
Elem/sec school	40	70	50	30	28	21	20	43	43	32	377	43	79
Government	425	420	496	476	509	544	567	786	911	951	6085	1003	1227
Nonprofit org	162	169	218	243	236	286	284	279	321	334	2532	402	311
Business/industry ..	1086	1121	1086	1211	1276	1407	1595	1891	2113	2270	15056	2390	1876
Self-employed	26	30	19	22	10	22	22	14	17	31	213	45	46
Other/unknown	87	94	105	143	158	141	177	162	151	54	1272	38	39
Total	3841	4025	4254	4644	5141	5775	6274	7466	8441	8499	58360	9030	9022
Physical sciences													
College/university .	329	347	361	394	433	521	529	579	710	523	4726	573	523
Elem/sec school	4	4	6	0	1	0	1	3	4	1	24	5	11
Government	57	60	82	64	76	90	71	143	176	164	983	174	158
Nonprofit org	25	34	43	54	32	41	38	29	39	47	382	63	43
Business/industry ..	583	580	471	508	509	515	577	732	771	797	6043	798	588
Self-employed	1	1	0	2	1	2	0	2	0	3	12	3	4
Other/unknown	20	19	21	43	37	43	45	45	34	6	313	5	2
Total	1019	1045	984	1065	1089	1212	1261	1533	1734	1541	12483	1621	1329
Earth, env., and marine sciences													
College/university .	78	69	61	79	95	111	103	150	148	143	1037	150	163
Elem/sec school	0	0	1	0	0	0	0	0	1	1	3	0	0
Government	26	28	41	42	29	43	43	50	49	48	399	37	66
Nonprofit org	6	5	8	5	6	5	6	8	4	7	60	9	6
Business/industry ..	42	44	38	60	51	67	61	50	75	67	555	75	68
Self-employed	1	1	2	1	0	0	2	0	1	4	12	0	4
Other/unknown	1	4	3	4	3	5	4	6	4	0	34	0	1
Total	154	151	154	191	184	231	219	264	282	270	2100	271	308
Engineering													
College/university .	240	308	339	375	441	570	582	683	682	646	4866	585	596
Elem/sec school	1	2	0	0	0	0	0	0	1	0	4	0	1
Government	25	24	25	35	46	64	83	130	207	236	875	242	346
Nonprofit org	15	24	34	42	56	65	70	64	81	89	540	100	50
Business/industry ..	274	297	383	412	473	592	711	818	926	1057	5943	1103	897
Self-employed	0	5	2	2	0	0	5	3	4	11	32	13	7
Other/unknown	18	28	30	39	50	45	63	43	45	11	372	4	10
Total	573	688	813	905	1066	1336	1514	1741	1946	2050	12632	2047	1907
Mathematical sciences													
College/university .	134	158	175	235	298	353	409	452	534	577	3325	617	639
Elem/sec school	1	0	1	1	0	0	1	0	1	1	6	0	0
Government	18	5	14	8	13	9	13	25	24	28	157	30	29
Nonprofit org	1	10	7	10	14	14	11	16	7	11	101	22	7
Business/industry ..	29	41	39	47	47	52	49	63	83	63	513	99	68
Self-employed	0	1	1	0	0	0	1	0	0	1	4	0	1
Other/unknown	4	4	3	4	5	4	2	6	6	0	38	0	2
Total	187	219	240	305	377	432	486	562	655	681	4144	768	746

See footnotes at end of table.

Table 13. Distribution of new science and engineering doctorates with definite employment commitments in the United States by employment sector, major field, and sex: 1960-82(1)--con.

Total, male and female

Employment sector	Year of doctorate 1972	1973	1974	1975	1976	1977	1978	1979	Total 1970-79	1980	1981	1982	Total 1980-82	Total 1960-82
Total, science and engineering														
College/university .	5029	4780	4214	4177	3879	3627	3301	3299	42859	3134	3096	2883	9113	84797
Elem/sec school	95	109	87	99	112	99	86	67	876	112	120	125	357	1610
Government	1434	1346	1224	1338	1253	1216	1023	1105	12169	1123	1106	881	3110	21364
Nonprofit org	341	441	444	430	418	426	474	486	4173	523	497	513	1533	8238
Business/industry ..	1540	1774	1832	1873	1578	1607	1792	2012	18274	2128	2283	2356	6767	40097
Self-employed	57	58	72	67	73	85	93	102	698	100	139	152	391	1302
Other/unknown	47	56	41	32	33	29	25	33	373	23	31	31	85	1730
Total	8543	8564	7914	8016	7346	7089	6794	7104	79422	7143	7272	6941	21356	159138
Physical sciences														
College/university .	445	337	267	214	224	219	181	167	3150	144	129	157	430	8306
Elem/sec school	21	15	11	6	13	7	5	3	97	6	4	2	12	133
Government	234	205	174	145	124	136	108	132	1590	110	112	89	311	2886
Nonprofit org	28	23	23	20	19	14	17	17	267	13	15	9	37	686
Business/industry ..	300	407	461	515	395	431	514	603	5012	651	756	767	2174	13229
Self-employed	0	6	2	6	2	5	3	5	36	2	3	1	6	56
Other/unknown	0	3	0	0	1	1	0	3	15	0	0	0	0	328
Total	1028	996	938	906	778	813	828	930	10167	926	1019	1025	2970	25620
Earth, env., and marine sciences														
College/university .	162	158	131	103	112	115	96	106	1296	101	89	98	288	2621
Elem/sec school	1	1	2	2	0	1	1	1	9	0	1	2	3	15
Government	66	79	77	96	79	94	78	61	733	74	70	53	197	1329
Nonprofit org	5	6	9	9	5	7	7	10	73	6	0	10	16	149
Business/industry ..	69	61	71	113	87	89	100	119	852	110	117	153	380	1787
Self-employed	3	0	4	1	2	1	2	2	19	0	3	1	4	35
Other/unknown	0	0	1	0	0	2	0	1	5	0	0	0	0	39
Total	306	305	295	324	285	309	284	300	2987	291	280	317	888	5975
Engineering														
College/university .	485	441	334	389	371	358	309	352	4220	352	361	333	1046	10132
Elem/sec school	0	2	0	0	1	0	0	0	4	0	0	0	0	8
Government	391	325	277	304	256	264	190	193	2788	207	154	139	500	4163
Nonprofit org	47	68	68	41	34	35	22	35	500	28	26	29	83	1123
Business/industry ..	849	898	889	819	697	674	670	734	8230	729	739	755	2223	16396
Self-employed	18	7	10	6	11	10	12	9	103	10	6	14	30	165
Other/unknown	5	1	4	1	3	1	6	1	36	0	2	2	4	412
Total	1795	1742	1582	1560	1373	1342	1209	1324	15881	1326	1288	1272	3886	32399
Mathematical sciences														
College/university .	563	493	444	436	407	348	362	362	4671	366	354	332	1052	9048
Elem/sec school	5	1	5	6	1	2	3	2	25	4	1	0	5	36
Government	54	48	37	50	47	40	37	46	418	33	33	38	104	679
Nonprofit org	8	9	7	8	2	5	7	7	82	8	4	5	17	200
Business/industry ..	83	82	80	85	64	86	107	125	879	140	147	114	401	1793
Self-employed	0	2	3	2	1	3	2	2	16	2	2	0	4	26
Other/unknown	2	0	0	0	1	0	0	2	7	0	0	0	0	45
Total	715	635	576	587	523	484	518	546	6098	553	541	489	1583	11825

See footnotes at end of table.

Table 13. Distribution of new science and engineering doctorates with definite employment commitments in the United States by employment sector, major field, and sex: 1960-82(1)--con.

Total, male and female

Employment sector	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	Total 1960-69	1970	1971
Life sciences													
College/university .	538	505	533	601	659	681	757	864	1021	1034	7193	1005	1032
Elem/sec school	4	9	6	4	1	0	1	4	1	2	32	5	5
Government	124	117	143	133	133	152	166	211	215	175	1569	203	225
Nonprofit org	41	27	33	29	23	53	46	46	61	28	387	49	38
Business/industry ..	95	104	100	112	118	117	130	147	167	180	1270	198	161
Self-employed	4	3	3	1	3	3	1	2	0	1	21	9	4
Other/unknown	13	16	18	24	27	25	26	30	27	10	216	4	2
Total	819	781	836	904	964	1031	1127	1304	1492	1430	10688	1473	1467
Social sciences													
College/university .	465	497	546	557	661	779	805	1057	1203	1253	7823	1494	1715
Elem/sec school	6	10	9	4	2	2	1	0	0	1	35	3	4
Government	51	57	49	67	60	71	74	75	80	87	671	104	155
Nonprofit org	32	19	37	33	35	35	39	34	50	49	363	53	56
Business/industry ..	25	21	25	28	33	37	32	40	42	58	341	56	52
Self-employed	5	3	5	3	3	3	4	2	2	3	33	5	8
Other/unknown	15	8	11	7	10	11	18	13	13	9	115	14	12
Total	599	615	682	699	804	938	973	1221	1390	1460	9381	1729	2002
Psychology													
College/university .	231	237	265	278	337	339	424	506	587	651	3855	685	776
Elem/sec school	24	45	27	21	24	19	16	36	35	26	273	30	58
Government	124	129	142	127	152	115	117	152	160	213	1431	213	248
Nonprofit org	42	50	56	70	70	73	74	82	79	103	699	106	111
Business/industry ..	38	34	30	44	45	27	35	41	49	48	391	61	42
Self-employed	15	16	6	13	3	14	9	5	10	8	99	15	18
Other/unknown	16	15	19	22	26	8	19	19	22	18	184	11	10
Total	490	526	545	575	657	595	694	841	942	1067	6932	1121	1263
Total, non-science and engineering(2)													
College/university .	1851	2075	2206	2455	2828	3305	3777	4459	5144	5491	33591	6428	6862
Elem/sec school	338	378	443	431	490	601	586	665	720	617	5269	703	593
Government	91	91	108	113	137	138	145	174	183	297	1477	370	505
Nonprofit org	89	85	108	132	136	129	146	200	186	155	1366	194	277
Business/industry ..	48	38	50	53	50	52	98	81	106	91	667	115	141
Self-employed	14	14	10	13	13	19	11	15	13	14	136	35	32
Other/unknown	27	21	25	20	36	30	29	38	29	49	304	56	27
Total	2458	2702	2950	3217	3690	4274	4792	5632	6381	6714	42810	7901	8737
Total, all fields													
College/university .	3866	4196	4486	4974	5752	6659	7386	8750	10029	10318	66416	11537	12306
Elem/sec school	378	443	493	461	518	622	606	708	763	649	5646	746	972
Government	516	511	604	589	646	682	712	960	1094	1248	7562	1373	1732
Nonprofit org	251	254	326	375	372	415	430	479	507	489	3898	596	588
Business/industry ..	1134	1159	1136	1264	1326	1459	1693	1972	2219	2361	15723	2505	2017
Self-employed	40	44	29	35	23	41	33	29	30	45	349	80	78
Other/unknown	114	115	130	163	194	171	206	200	180	103	1576	94	66
Total	6299	6727	7204	7861	8831	10049	11066	13098	14822	15213	101170	16931	17759

See footnotes at end of table.

Table 13. Distribution of new science and engineering doctorates with definite employment commitments in the United States by employment sector, major field, and sex: 1960-82(1)--con.

Total, male and female

Employment sector	1972	1973	1974	1975	1976	1977	1978	1979	Total 1970-79	1980	1981	1982	Total 1980-82	Total 1960-82
	Year of doctorate													
Life sciences														
College/university .	881	901	770	707	658	596	590	606	7746	562	550	530	1642	16581
Elem/sec school	12	11	10	8	5	7	3	4	70	2	7	4	13	115
Government	213	213	186	193	191	150	160	144	1878	166	152	125	443	3890
Nonprofit org	65	62	57	58	52	33	38	49	501	44	39	52	135	1023
Business/industry ..	143	195	198	203	187	179	205	202	1871	234	251	281	766	3907
Self-employed	6	16	13	10	8	10	12	7	95	8	18	14	40	156
Other/unknown	6	4	2	2	2	1	0	4	27	1	2	3	6	249
Total	1326	1402	1236	1181	1103	976	1008	1016	12188	1017	1019	1009	3045	25921
Social sciences														
College/university .	1764	1697	1544	1576	1428	1345	1187	1090	14840	1041	1001	919	2961	25624
Elem/sec school	7	6	3	10	4	4	4	5	50	6	7	10	23	108
Government	151	163	173	205	197	170	159	170	1647	201	207	144	552	2870
Nonprofit org	58	85	69	64	59	59	67	76	646	92	83	61	236	1245
Business/industry ..	60	67	68	81	76	77	91	99	727	111	111	120	342	1410
Self-employed	12	6	8	10	7	13	11	14	94	13	13	26	52	179
Other/unknown	30	29	25	17	22	21	12	16	198	16	23	22	61	374
Total	2082	2053	1890	1963	1793	1689	1531	1470	18202	1480	1445	1302	4227	31810
Psychology														
College/university .	729	753	724	752	679	646	576	616	6936	568	612	514	1694	12485
Elem/sec school	49	73	56	67	88	78	70	52	621	94	100	107	301	1195
Government	325	313	300	345	359	362	291	359	3115	332	378	293	1003	5549
Nonprofit org	130	188	211	230	247	273	316	292	2104	332	330	347	1009	3812
Business/industry ..	36	64	65	57	72	71	105	130	703	153	162	166	481	1575
Self-employed	18	21	32	32	42	43	51	63	335	65	94	96	255	689
Other/unknown	4	19	9	12	4	3	7	6	85	6	4	4	14	283
Total	1291	1431	1397	1495	1491	1476	1416	1518	13899	1550	1680	1527	4757	25588
Total, non-science and engineering(2)														
College/university .	6889	6847	6201	5958	5582	5270	4959	4834	60130	4774	4628	4360	13762	107483
Elem/sec school	1159	1244	1174	1295	1408	1249	1182	1168	11475	1367	1353	1283	4003	20747
Government	523	628	701	739	744	732	738	768	6448	740	766	692	2198	10123
Nonprofit org	316	371	366	460	483	478	494	495	3934	547	510	540	1597	6897
Business/industry ..	115	156	200	207	184	207	240	282	1847	326	333	391	1050	3564
Self-employed	36	36	43	63	74	87	87	96	589	119	146	171	436	1161
Other/unknown	25	36	26	30	26	17	16	23	282	16	21	22	59	645
Total	9063	9318	8711	8752	8801	8040	7716	7666	84705	7889	7757	7459	23105	150620
Total, all fields														
College/university .	11918	11627	10415	10135	9761	8897	8260	8133	102989	7908	7724	7243	22875	192280
Elem/sec school	1254	1353	1261	1394	1520	1348	1268	1235	12351	1479	1473	1408	4360	22357
Government	1957	1974	1925	2077	1997	1948	1761	1873	18617	1863	1872	1573	5308	31487
Nonprofit org	657	812	810	890	901	904	968	981	8107	1070	1007	1053	3130	15135
Business/industry ..	1655	1930	2032	2080	1762	1814	2032	2294	20121	2454	2616	2747	7817	43661
Self-employed	93	94	115	130	147	172	180	198	1287	219	285	323	827	2463
Other/unknown	72	92	67	62	59	46	41	56	655	39	52	53	144	2375
Total	17606	17882	16625	16768	16147	15129	14510	14770	164127	15032	15029	14400	44461	309758

See footnotes at end of table.

Table 13. Distribution of new science and engineering doctorates with definite employment commitments in the United States by employment sector, major field, and sex: 1960-82(1)--con.

Male

Employment sector	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	Total 1960-69	1970	1971
	Year of doctorate												
Total, science and engineering													
College/university .	1861	1967	2114	2331	2688	3112	3346	3921	4453	4369	30162	4649	4871
Elem/sec school	32	60	42	21	22	17	15	26	29	25	289	34	61
Government	399	396	466	437	470	512	527	743	850	892	5692	939	1148
Nonprofit org	148	155	199	223	204	248	246	242	277	287	2229	360	268
Business/industry ..	1072	1102	1074	1193	1262	1386	1571	1867	2083	2250	14860	2360	1852
Self-employed	24	24	14	19	6	16	20	11	13	27	174	36	42
Other/unknown	83	89	103	138	153	141	172	159	150	47	1235	28	35
Total	3619	3793	4012	4362	4805	5432	5897	6969	7855	7897	54641	8406	8277
Physical sciences													
College/university .	312	334	346	377	413	487	504	542	672	485	4472	533	492
Elem/sec school	4	4	6	0	1	0	1	2	4	1	23	5	10
Government	56	59	80	60	74	88	70	141	170	162	960	169	155
Nonprofit org	25	34	43	54	31	40	37	27	35	45	371	60	43
Business/industry ..	573	566	465	500	501	505	567	716	758	786	5937	786	582
Self-employed	1	1	0	2	1	2	0	1	0	3	11	3	4
Other/unknown	20	19	21	43	37	43	45	45	33	5	311	4	2
Total	991	1017	961	1036	1058	1165	1224	1474	1672	1487	12085	1560	1288
Earth, env., and marine sciences													
College/university .	78	68	60	78	93	110	99	148	145	137	1016	144	159
Elem/sec school	0	0	0	0	0	0	0	0	1	1	2	0	0
Government	26	28	41	42	29	43	42	48	48	45	392	36	63
Nonprofit org	6	5	8	5	6	5	6	8	4	7	60	7	6
Business/industry ..	42	44	38	60	51	67	61	50	75	66	554	75	68
Self-employed	1	1	2	1	0	0	2	0	1	4	12	0	4
Other/unknown	1	4	3	4	3	5	4	6	4	0	34	0	1
Total	154	150	152	190	182	230	214	260	278	260	2070	262	301
Engineering													
College/university .	239	304	338	375	441	567	581	683	680	643	4851	582	596
Elem/sec school	1	2	0	0	0	0	0	0	1	0	4	0	1
Government	25	24	25	34	45	64	83	130	206	236	872	241	346
Nonprofit org	15	24	34	42	55	65	70	63	81	89	538	100	50
Business/industry ..	273	297	383	409	472	592	707	817	922	1056	5928	1102	894
Self-employed	0	5	2	2	0	0	5	3	4	11	32	13	7
Other/unknown	18	28	30	39	50	45	63	43	45	11	372	4	10
Total	571	684	812	901	1063	1333	1509	1739	1939	2046	12597	2042	1904
Mathematical sciences													
College/university .	126	149	164	217	275	324	388	420	507	544	3114	581	600
Elem/sec school	0	0	1	1	0	0	1	0	1	1	5	0	0
Government	18	5	14	8	13	9	13	24	24	28	156	30	28
Nonprofit org	1	10	7	9	14	13	10	15	7	11	97	22	7
Business/industry ..	28	40	37	47	46	51	47	62	83	62	503	99	66
Self-employed	0	1	1	0	0	0	1	0	0	1	4	0	0
Other/unknown	4	4	3	4	5	4	2	5	6	0	37	0	2
Total	177	209	227	286	353	401	462	526	628	647	3916	732	703

See footnotes at end of table.

Table 13. Distribution of new science and engineering doctorates with definite employment commitments in the United States by employment sector, major field, and sex: 1960-82(1)--con.

Male

Employment sector	1972	1973	1974	1975	1976	1977	1978	1979	Total 1970-79	1980	1981	1982	Total 1980-82	Total 1960-82
							Year of doctorate							
Total, science and engineering														
College/university .	4425	4123	3472	3401	3124	2880	2575	2543	36063	2371	2355	2166	6892	73117
Elem/sec school	67	85	67	65	76	63	46	37	601	55	60	72	187	1077
Government	1353	1224	1118	1213	1112	1073	894	895	10969	933	868	686	2487	19148
Nonprofit org	279	365	371	338	324	304	318	320	3247	359	306	316	981	6457
Business/industry ..	1516	1709	1780	1794	1484	1506	1641	1843	17483	1883	2018	2056	5957	38300
Self-employed	49	52	62	55	53	70	77	75	571	69	91	109	269	1014
Other/unknown	39	46	37	27	30	22	20	26	310	14	21	24	59	1604
Total	7726	7604	6907	6893	6203	5918	5571	5739	69244	5684	5719	5429	16832	140717
Physical sciences														
College/university .	405	309	248	188	198	202	164	143	2882	117	113	137	367	7721
Elem/sec school	19	13	10	5	13	6	4	2	87	6	4	2	12	122
Government	228	201	170	139	118	132	97	121	1530	102	97	81	280	2770
Nonprofit org	27	23	23	19	15	12	13	15	250	12	11	7	30	651
Business/industry ..	292	390	439	484	368	402	469	553	4765	573	666	672	1911	12613
Self-employed	0	5	2	6	2	5	3	5	35	1	2	1	4	50
Other/unknown	0	3	0	0	1	1	0	3	14	0	0	0	0	325
Total	971	944	892	841	715	760	750	842	9563	811	893	900	2604	24252
Earth, env., and marine sciences														
College/university .	159	151	122	98	104	108	90	96	1231	90	83	86	259	2506
Elem/sec school	1	1	2	2	0	1	1	1	9	0	1	2	3	14
Government	66	78	77	94	72	91	72	59	708	69	63	48	180	1280
Nonprofit org	5	6	7	9	4	5	7	9	65	6	0	10	16	141
Business/industry ..	69	55	69	108	79	86	86	113	811	101	105	131	337	1702
Self-employed	3	3	4	1	2	1	2	2	19	0	3	1	4	35
Other/unknown	0	0	1	0	0	2	0	1	5	0	0	0	0	39
Total	303	294	282	312	261	294	258	281	2848	266	255	278	799	5717
Engineering														
College/university .	480	434	326	374	362	346	296	341	4137	335	340	309	984	9972
Elem/sec school	0	2	0	0	1	0	0	0	4	0	0	0	0	8
Government	389	322	276	300	253	258	185	187	2757	201	149	129	479	4108
Nonprofit org	47	68	68	40	34	34	22	33	496	27	25	29	81	1115
Business/industry ..	847	891	885	808	687	658	658	716	8146	700	712	729	2141	16215
Self-employed	18	6	10	6	11	10	12	9	102	10	6	13	29	163
Other/unknown	5	1	4	1	3	1	6	1	36	0	1	2	3	411
Total	1786	1724	1569	1529	1351	1307	1179	1287	15678	1273	1233	1211	3717	31992
Mathematical sciences														
College/university .	525	442	397	386	351	302	306	297	4187	310	299	288	897	8198
Elem/sec school	4	1	5	5	0	2	3	2	22	2	1	0	3	30
Government	53	44	35	46	45	38	34	38	391	29	30	32	91	638
Nonprofit org	7	9	6	7	2	4	5	4	73	8	3	5	16	186
Business/industry ..	81	75	79	80	61	78	93	107	819	128	127	97	352	1674
Self-employed	0	2	3	2	1	3	2	2	15	2	2	0	4	23
Other/unknown	2	0	0	0	1	0	0	2	7	0	0	0	0	44
Total	672	573	525	526	461	427	443	452	5514	479	462	422	1363	10793

See footnotes at end of table.

Table 13. Distribution of new science and engineering doctorates with definite employment commitments in the United States by employment sector, major field, and sex: 1960-82(1)--con.

Male

Employment sector	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	Total 1960-69	1970	1971
	Year of doctorate												
Life sciences													
College/university .	486	453	480	543	595	616	687	760	900	925	6445	904	898
Elem/sec school	4	9	5	3	1	0	1	3	1	2	29	4	3
Government	120	114	135	126	124	146	158	200	202	170	1495	197	218
Nonprofit org	38	22	27	24	20	43	39	37	46	24	320	42	35
Business/industry ..	94	101	98	108	116	110	125	145	163	178	1238	191	153
Self-employed	4	3	3	1	3	3	1	1	0	1	20	7	4
Other/unknown	12	15	18	24	26	25	25	30	27	8	210	3	2
Total	758	717	766	829	[illegible]	943	1036	1176	1339	1308	9757	1348	1313
Social sciences													
College/university .	433	463	503	512	602	723	729	951	1071	1111	7098	1342	1501
Elem/sec school	5	7	8	2	1	1	1	0	0	1	26	3	4
Government	45	56	44	60	57	67	70	73	71	81	624	98	143
Nonprofit org	29	18	33	29	31	31	37	29	47	41	325	47	42
Business/industry ..	25	21	24	26	33	35	32	38	39	56	329	53	51
Self-employed	5	3	4	2	1	3	4	1	2	2	27	5	8
Other/unknown	14	7	10	6	9	11	18	12	13	8	108	11	12
Total	556	575	626	637	734	871	891	1104	1243	1300	8537	1559	1761
Psychology													
College/university .	187	196	223	229	269	285	358	417	478	524	3166	563	625
Elem/sec school	18	38	22	15	19	16	11	21	21	19	200	22	43
Government	109	110	127	107	128	95	91	127	129	170	1193	168	195
Nonprofit org	34	42	47	60	47	51	47	63	57	70	518	82	85
Business/industry ..	37	33	29	43	43	26	32	39	43	46	371	54	38
Self-employed	13	10	2	11	1	8	7	5	6	5	68	8	15
Other/unknown	14	12	18	18	23	8	15	18	22	15	163	6	6
Total	412	441	468	483	530	489	561	690	756	849	5679	903	1007
Total, non-science and engineering(2)													
College/university .	1549	1750	1853	2039	2372	2801	3150	3704	4221	4469	27908	5237	5593
Elem/sec school	291	318	382	375	421	513	500	558	625	539	4522	606	745
Government	84	81	94	93	122	122	126	144	150	260	1276	327	433
Nonprofit org	80	73	93	112	118	108	130	166	157	128	1165	155	228
Business/industry ..	44	37	49	50	49	48	91	76	100	86	630	105	130
Self-employed	13	10	5	9	11	15	8	11	11	12	105	26	24
Other/unknown	25	17	21	20	33	25	26	34	28	41	270	48	21
Total	2086	2286	2497	2698	3126	3632	4031	4693	5292	5535	35876	6504	7174
Total, all fields													
College/university .	3410	3717	3967	4370	5060	5913	6496	7625	8674	8838	58070	9886	10464
Elem/sec school	323	373	424	396	443	530	515	584	654	564	4811	640	806
Government	483	477	560	530	592	634	653	887	1000	1152	6968	1266	1581
Nonprofit org	228	228	292	335	322	356	376	408	434	415	3394	515	496
Business/industry ..	1116	1139	1123	1243	1311	1434	1662	1943	2183	2336	15490	2465	1982
Self-employed	37	34	19	28	17	31	28	22	24	39	279	62	66
Other/unknown	108	106	124	158	186	166	198	193	178	88	1505	76	56
Total	5705	6079	6509	7060	7931	9064	9928	11662	13147	13432	90517	14910	15451

See footnotes at end of table.

Table 13. Distribution of new science and engineering doctorates with definite employment commitments in the United States by employment sector, major field, and sex: 1960-82(1)--con.

Male

Employment sector	1972	1973	1974	1975	1976	1977	1978	1979	Total 1970-79	1980	1981	1982	Total 1980-82	Total 1960-82
	Year of doctorate													
Life sciences														
College/university .	782	757	649	578	540	492	475	491	6566	436	426	415	1277	14288
Elem/sec school	8	10	6	6	4	5	2	3	51	2	6	4	12	92
Government	205	200	173	180	185	134	143	123	1758	139	118	99	356	3609
Nonprofit org	50	53	50	49	43	26	26	41	415	34	30	34	98	833
Business/industry ..	141	183	189	195	174	158	189	177	1750	194	213	226	633	3621
Self-employed	6	16	12	8	8	9	11	7	88	8	15	10	33	141
Other/unknown	5	4	2	2	2	0	0	3	23	1	2	3	6	239
Total	1197	1223	1081	1018	956	824	846	845	10651	814	810	791	2415	22823
Social sciences														
College/university .	1535	1461	1240	1255	1115	1042	885	808	12184	779	746	661	2186	21468
Elem/sec school	5	5	3	9	4	4	3	3	43	2	5	6	13	82
Government	140	149	158	189	172	148	142	132	1471	165	172	114	451	2546
Nonprofit org	49	70	59	54	45	45	51	49	511	67	49	36	152	988
Business/industry ..	56	60	63	73	66	69	70	85	646	85	86	99	270	1245
Self-employed	9	6	7	8	6	12	11	11	83	10	10	23	43	153
Other/unknown	27	27	24	16	19	16	10	11	173	10	16	16	42	323
Total	1821	1778	1554	1604	1427	1336	1172	1099	15111	1118	1084	955	3157	26805
Psychology														
College/university .	539	569	490	522	454	388	359	367	4876	304	348	270	922	8964
Elem/sec school	30	53	41	38	54	45	33	26	385	43	43	58	144	729
Government	272	230	229	265	267	272	221	235	2354	228	239	183	650	4197
Nonprofit org	94	136	158	160	181	178	194	169	1437	205	188	195	588	2543
Business/industry ..	28	52	56	46	49	55	76	92	546	102	109	102	313	1230
Self-employed	13	17	24	24	23	30	36	39	229	38	53	61	152	449
Other/unknown	0	11	6	8	4	2	4	5	52	3	2	3	8	223
Total	976	1068	1004	1063	1032	970	923	933	9879	923	982	872	2777	18335
Total, non-science and engineering(2)														
College/university .	5431	5284	4656	4226	4011	3477	3153	2946	44014	2765	2579	2359	7703	79623
Elem/sec school	968	1035	928	999	1061	899	826	771	8838	842	803	766	2411	15771
Government	451	522	589	562	580	551	524	517	5056	509	475	403	1387	7719
Nonprofit org	265	304	295	358	360	366	372	348	3051	398	350	338	1086	5302
Business/industry ..	99	137	167	165	155	165	184	200	1507	213	241	267	721	2858
Self-employed	31	24	35	40	53	66	53	63	415	74	77	88	239	759
Other/unknown	19	28	22	25	15	12	12	13	215	9	17	11	37	522
Total	7264	7334	6692	6375	6235	5536	5124	4858	63096	4810	4542	4232	13584	112556
Total, all fields														
College/university .	9856	9407	8128	7627	7135	6357	5728	5489	80077	5136	4934	4525	14595	152742
Elem/sec school	1035	1120	995	1064	1137	962	872	808	9439	897	863	838	2598	16848
Government	1804	1746	1707	1775	1692	1624	1418	1412	16025	1442	1343	1089	3874	26867
Nonprofit org	544	669	666	696	684	670	690	668	6298	757	656	654	2067	11759
Business/industry ..	1613	1846	1947	1959	1639	1671	1825	2043	18990	2096	2259	2323	6678	41158
Self-employed	80	76	97	95	106	136	130	138	986	143	168	197	508	1773
Other/unknown	58	74	59	52	45	34	32	39	525	23	38	35	96	2126
Total	14990	14938	13599	13268	12438	11454	10695	10597	132340	10494	10261	9661	30416	253273

See footnotes at end of table.

Table 13. Distribution of new science and engineering doctorates with definite employment commitments in the United States by employment sector, major field, and sex: 1960-82(1)--con.

Female

Employment sector	Year of doctorate 1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	Total 1960-69	1970	1971
Total, science and engineering													
College/university .	154	134	166	188	236	242	263	370	432	458	2663	460	573
Elem/sec school	8	10	8	9	6	4	5	17	14	7	88	9	18
Government	26	24	30	39	39	32	40	43	61	59	393	64	79
Nonprofit org	14	14	19	20	32	38	38	37	44	47	303	42	43
Business/industry ..	14	19	12	18	14	21	24	24	30	20	196	30	24
Self-employed	2	6	5	3	4	6	2	3	4	4	39	9	4
Other/unknown	4	5	2	5	5	0	5	3	1	7	37	10	4
Total	222	232	242	282	336	343	377	497	586	602	3719	624	745
Physical sciences													
College/university .	17	13	15	17	20	34	25	37	38	38	254	40	31
Elem/sec school	0	0	0	0	0	0	0	1	0	0	1	0	1
Government	1	1	2	4	2	2	1	2	6	2	23	5	3
Nonprofit org	0	0	0	0	1	1	1	2	4	2	11	3	0
Business/industry ..	10	14	6	8	8	10	10	16	13	11	106	12	6
Self-employed	0	0	0	0	0	0	0	1	0	0	1	0	0
Other/unknown	0	0	0	0	0	0	0	0	1	1	2	1	0
Total	28	28	23	29	31	47	37	59	62	54	398	61	41
Earth, env., and marine sciences													
College/university .	0	1	1	1	2	1	4	2	3	6	21	6	4
Elem/sec school	0	0	1	0	0	0	0	0	0	0	1	0	0
Government	0	0	0	0	0	0	1	2	1	3	7	1	3
Nonprofit org	0	0	0	0	0	0	0	0	0	0	0	2	0
Business/industry ..	0	0	0	0	0	0	0	0	0	1	1	0	0
Self-employed	0	0	0	0	0	0	0	0	0	0	0	0	0
Other/unknown	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	2	1	2	1	5	4	4	10	30	9	7
Engineering													
College/university .	1	4	1	0	0	3	1	0	2	3	15	3	0
Elem/sec school	0	0	0	0	0	0	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0	0	1	0	3	1	0
Nonprofit org	0	0	0	1	1	0	0	0	1	0	2	0	0
Business/industry ..	0	0	0	0	1	0	0	1	0	0	2	0	0
Self-employed	1	0	0	3	1	0	4	1	4	1	15	1	3
Other/unknown	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
	2	4	1	4	3	3	5	2	7	4	35	5	3
Mathematical sciences													
College/university .	8	9	11	18	23	29	21	32	27	33	211	36	39
Elem/sec school	0	0	0	0	0	0	0	0	0	0	1	0	0
Government	1	0	0	0	0	0	0	1	0	0	1	0	1
Nonprofit org	0	0	0	0	0	0	0	1	0	0	4	0	0
Business/industry ..	0	0	0	1	0	1	1	1	0	1	10	0	2
Self-employed	1	1	2	0	1	1	2	0	0	0	0	0	1
Other/unknown	0	0	0	0	0	0	0	1	0	0	1	0	0
Total	10	10	13	19	24	31	24	36	27	34	228	36	43

See footnotes at end of table.

Table 13. Distribution of new science and engineering doctorates with definite employment commitments in the United States by employment sector, major field, and sex: 1960-82(1)--con.

Female

Employment sector	1972	1973	1974	1975	1976	1977	1978	1979	Total 1970-79	1980	1981	1982	Total 1980-82	Total 1960-82
	Year of doctorate													
Total, science and engineering														
College/university .	604	657	742	776	755	747	736	756	6796	763	741	717	2221	11650
Elem/sec school	28	24	20	34	36	36	40	30	275	57	60	53	170	533
Government	31	122	106	125	141	143	129	210	1200	190	238	195	623	2216
Nonprofit org	62	76	73	92	94	122	156	166	926	164	191	197	552	1781
Business/industry ..	26	65	52	79	94	101	151	169	791	245	265	300	810	1797
Self-employed	8	6	10	12	20	15	16	27	127	31	48	43	122	288
Other/unknown	8	10	4	5	3	7	5	7	63	9	10	7	26	126
Total	817	960	1007	1123	1143	1171	1223	1365	10178	1459	1553	1512	4524	18421
Physical sciences														
College/university .	40	28	19	26	26	17	17	24	268	27	16	20	63	585
Elem/sec school	2	2	1	1	0	1	1	1	10	0	0	0	0	11
Government	6	4	4	6	6	4	11	11	60	8	15	8	31	114
Nonprofit org	1	0	0	1	4	2	4	2	17	1	4	2	7	35
Business/industry ..	8	17	22	31	27	29	45	50	247	78	90	95	263	616
Self-employed	0	1	0	0	0	0	0	0	1	1	1	0	2	4
Other/unknown	0	0	0	0	0	0	0	0	1	0	0	0	0	3
Total	57	52	46	65	63	53	78	88	604	115	126	125	366	1368
Earth, env., and marine sciences														
College/university .	3	7	9	5	8	7	6	10	65	11	6	12	29	115
Elem/sec school	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Government	0	1	0	2	7	3	6	2	25	5	7	5	17	49
Nonprofit org	0	0	2	0	1	2	0	1	8	0	0	0	0	8
Business/industry ..	0	3	2	5	8	3	14	6	41	9	12	22	43	85
Self-employed	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other/unknown	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	3	11	13	12	24	15	26	19	139	25	25	39	89	258
Engineering														
College/university .	5	7	8	15	9	12	13	11	83	17	21	24	62	160
Elem/sec school	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Government	2	3	1	4	3	6	5	6	31	6	5	10	21	55
Nonprofit org	0	0	0	1	0	1	0	2	4	1	1	0	2	8
Business/industry ..	2	7	4	11	10	16	12	18	84	29	27	26	82	181
Self-employed	0	1	0	0	0	0	0	0	1	0	0	1	1	2
Other/unknown	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Total	9	18	13	31	22	35	30	37	203	53	55	61	169	407
Mathematical sciences														
College/university .	38	51	47	50	56	46	56	65	484	56	55	44	155	850
Elem/sec school	1	0	0	1	1	0	0	0	3	2	0	0	2	6
Government	1	4	2	4	2	2	3	8	27	4	3	6	13	41
Nonprofit org	1	0	1	1	0	1	2	3	9	0	1	0	1	14
Business/industry ..	2	7	1	5	3	8	14	18	60	12	20	17	49	119
Self-employed	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Other/unknown	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	43	62	51	61	62	57	75	94	584	74	79	67	220	1032

See footnotes at end of table.

Table 13. Distribution of new science and engineering doctorates with definite employment commitments in the United States by employment sector, major field, and sex: 1960-82(1)--con.

Female

Employment sector	Year of doctorate												
	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	Total 1960-69	1970	1971
Life sciences													
College/university .	52	52	53	58	64	65	70	104	121	109	748	101	134
Elem/sec school	0	0	1	1	0	0	0	1	0	0	3	1	2
Government	4	3	8	7	9	6	8	11	13	5	74	6	7
Nonprofit org	3	5	6	5	3	10	7	9	15	4	67	7	3
Business/industry ..	1	3	2	4	2	7	5	2	4	2	32	7	8
Self-employed	0	0	0	0	0	0	0	1	0	0	1	2	0
Other/unknown	1	1	0	0	1	0	1	0	0	2	6	1	0
Total	61	64	70	75	79	88	91	128	153	122	931	125	154
Social sciences													
College/university .	32	34	43	45	59	56	76	106	132	142	725	152	214
Elem/sec school	1	3	1	2	1	1	0	0	0	0	9	0	0
Government	6	1	5	7	3	4	4	2	9	6	47	6	12
Nonprofit org	3	1	4	4	4	4	2	5	3	8	38	6	14
Business/industry ..	0	0	1	2	0	2	0	2	3	2	12	3	1
Self-employed	0	0	1	1	2	0	0	1	0	1	6	0	0
Other/unknown	1	1	1	1	1	0	0	1	0	1	7	3	0
Total	43	40	56	62	70	67	82	117	147	160	844	170	241
Psychology													
College/university .	44	41	42	49	68	54	66	89	109	127	689	122	151
Elem/sec school	6	7	5	6	5	3	5	15	14	7	73	8	15
Government	15	19	15	20	24	20	26	25	31	43	238	45	53
Nonprofit org	8	8	9	10	23	22	27	19	22	33	181	24	26
Business/industry ..	1	1	1	1	2	1	3	2	6	2	20	7	4
Self-employed	2	6	4	2	2	6	2	0	4	3	31	7	3
Other/unknown	2	3	1	4	3	0	4	1	0	3	21	5	4
Total	78	85	77	92	127	106	133	151	186	218	1253	218	256
Total, non-science and engineering(2)													
College/university .	302	325	353	416	456	504	627	755	923	1022	5683	1191	1269
Elem/sec school	47	60	61	56	69	88	86	107	95	78	747	97	148
Government	7	10	14	20	15	16	19	30	33	37	201	43	72
Nonprofit org	9	12	15	20	18	21	16	34	29	27	201	39	49
Business/industry ..	4	1	1	3	1	4	7	5	6	5	37	10	11
Self-employed	1	4	5	4	2	4	3	4	2	2	31	9	8
Other/unknown	2	4	4	0	3	5	3	4	1	8	34	8	6
Total	372	416	453	519	564	642	761	939	1089	1179	6934	1397	1563
Total, all fields													
College/university .	456	479	519	604	692	746	890	1125	1355	1480	8346	1651	1842
Elem/sec school	55	70	69	65	75	92	91	124	109	85	835	106	166
Government	33	34	44	59	54	48	59	73	94	96	594	107	151
Nonprofit org	23	26	34	40	50	59	54	71	73	74	504	81	92
Business/industry ..	18	20	13	21	15	25	31	29	36	25	233	40	35
Self-employed	3	10	10	7	6	10	5	7	6	6	70	18	12
Other/unknown	6	9	6	5	8	5	8	7	2	15	71	18	10
Total	594	648	695	801	900	985	1138	1436	1675	1781	10653	2021	2308

See footnotes at end of table.

Table 13. Distribution of new science and engineering doctorates with definite employment commitments in the United States by employment sector, major field, and sex: 1960-82(1)--con.

Female

Employment sector	Year of doctorate 1972	1973	1974	1975	1976	1977	1978	1979	Total 1970-79	1980	1981	1982	Total 1980-82	Total 1960-82
Life sciences														
College/university .	99	144	121	129	118	104	115	115	1180	126	124	115	365	2293
Elem/sec school	4	1	4	2	1	2	1	1	19	0	1	0	1	23
Government	8	13	13	13	6	16	17	21	120	27	34	26	87	281
Nonprofit org	15	9	7	9	9	7	12	8	86	10	9	18	37	190
Business/industry ..	2	12	9	8	13	21	16	25	121	40	38	55	133	286
Self-employed	0	0	1	2	0	1	1	0	7	0	3	4	7	15
Other/unknown	1	0	0	0	0	1	0	1	4	0	0	0	0	10
Total	129	179	155	163	147	152	162	171	1537	203	209	218	630	3098
Social sciences														
College/university .	229	236	304	321	313	303	302	282	2656	262	255	258	775	4156
Elem/sec school	2	1	0	1	0	0	1	2	7	4	2	4	10	26
Government	11	14	15	16	25	22	17	38	176	36	35	30	101	324
Nonprofit org	9	15	10	10	14	14	16	27	135	25	34	25	84	257
Business/industry ..	4	7	5	8	10	8	21	14	81	26	25	21	72	165
Self-employed	3	0	1	2	1	1	0	3	11	3	3	3	9	26
Other/unknown	3	2	1	1	3	5	2	5	25	6	7	6	19	51
Total	261	275	336	359	366	353	359	371	3091	362	361	347	1070	5005
Psychology														
College/university .	190	184	234	230	225	258	217	249	2060	264	264	244	772	3521
Elem/sec school	19	20	15	29	34	33	37	26	236	51	57	49	157	466
Government	53	83	71	80	92	90	70	124	761	104	139	110	353	1352
Nonprofit org	36	52	53	70	66	95	122	123	667	127	142	152	421	1269
Business/industry ..	8	12	9	11	23	16	29	38	157	51	53	64	168	345
Self-employed	5	4	8	8	19	13	15	24	106	27	41	35	103	240
Other/unknown	4	8	3	4	0	1	3	1	33	3	2	1	6	60
Total	315	363	393	432	459	506	493	585	4020	627	698	655	1980	7253
Total, non-science and engineering(2)														
College/university .	1458	1563	1545	1732	1871	1793	1806	1888	16116	2009	2049	2001	6059	27858
Elem/sec school	191	209	246	296	347	350	356	397	2637	525	550	517	1592	4976
Government	72	106	112	177	164	181	214	251	1392	231	291	289	811	2404
Nonprofit org	51	67	71	102	123	112	122	147	883	149	160	202	511	1595
Business/industry ..	16	19	33	42	29	42	56	82	340	113	92	124	329	706
Self-employed	5	12	8	23	21	21	34	33	174	45	69	83	197	402
Other/unknown	6	8	4	5	11	5	4	10	67	7	4	11	22	123
Total	1799	1984	2019	2377	2566	2504	2592	2808	21609	3079	3215	3227	9521	38064
Total, all fields														
College/university .	2062	2220	2287	2508	2626	2540	2532	2644	22912	2772	2790	2718	8280	39538
Elem/sec school	219	233	266	330	383	386	396	427	2912	582	610	570	1762	5509
Government	153	228	218	302	305	324	343	461	2592	421	529	484	1434	4620
Nonprofit org	113	143	144	194	217	234	278	313	1809	313	351	399	1063	3376
Business/industry ..	42	84	85	121	123	143	207	251	1131	353	357	424	1139	2503
Self-employed	13	18	18	35	41	36	50	60	301	76	117	126	319	690
Other/unknown	14	18	8	10	14	12	9	17	130	16	14	18	48	249
Total	2616	2944	3026	3500	3709	3675	3815	4173	31787	4538	4768	4739	14045	56485

(1) Only doctorates with definite employment commitments in the United States are reported here. A "definite commitment" is defined as having a signed contract, acceptance of a formal offer, etc.

(2) Non-science/engineering doctorates in this table include doctorates whose field of specialization is unknown.

SOURCES: National Science Foundation and National Research Council

Table 14. Proportion of new science and engineering doctorates pursuing immediate employment in field of degree by sex: for selected years(1)

Field	1970	1972	1974	1976	1978	1980	1982
Total, male and female							
Total, science/eng ...	89.5	77.1	75.8	70.9	70.6	81.0	83.9
Physics/astronomy ..	77.5	66.3	62.2	58.9	56.1	66.9	63.8
Chemistry	88.1	69.6	71.2	72.6	68.5	79.4	85.5
Earth/env/mar sci ..	86.1	77.7	69.5	70.2	69.8	84.5	81.2
Engineering	84.4	72.8	71.5	69.8	67.9	80.7	83.5
Chemical	84.0	67.4	68.3	65.0	57.4	78.8	84.2
Civil	74.4	70.0	60.2	58.0	48.5	69.9	74.2
Electrical	78.2	64.6	62.6	59.3	60.7	69.4	73.4
Mechanical	69.1	59.2	59.5	57.7	54.6	69.8	69.1
Mathematical science	86.3	75.4	72.6	70.4	67.8	81.0	81.3
Agricultural science	73.8	68.6	65.7	62.9	63.4	73.7	79.4
Biological sciences.	77.7	66.4	67.0	59.8	62.3	69.4	70.3
Social sciences	81.2	71.4	70.6	62.5	60.8	68.7	69.7
Psychology	87.1	77.0	75.0	73.6	72.6	78.8	81.4
Total, non-sci/eng(2).	86.4	76.5	75.3	67.5	68.5	77.6	79.6
Male							
Total, science/eng ...	89.9	77.3	76.1	71.0	70.6	81.6	84.7
Physics/astronomy ..	77.3	66.1	62.4	58.1	55.5	67.7	63.6
Chemistry	88.4	69.6	71.3	71.8	69.0	79.1	86.6
Earth/env/mar sci ..	86.3	77.7	69.5	69.6	69.6	84.4	81.4
Engineering	84.5	72.7	71.5	69.7	68.1	80.8	83.7
Chemical	84.0	67.8	67.9	64.8	57.5	79.2	83.2
Civil	74.8	70.0	59.8	58.1	50.0	70.4	74.7
Electrical	78.2	64.3	62.5	58.7	61.1	69.4	73.8
Mechanical	69.3	59.0	59.5	58.2	54.4	70.6	69.0
Mathematical science	85.9	75.7	72.1	70.7	69.2	81.2	81.5
Agricultural science	73.9	68.5	67.0	62.7	64.0	74.6	80.2
Biological sciences.	77.9	66.0	67.4	58.5	58.1	68.0	70.0
Social sciences	81.3	71.5	70.3	62.4	61.3	69.5	71.3
Psychology	88.2	77.5	75.0	73.2	71.5	79.1	81.2
Total, non-sci/eng(2).	86.4	76.0	74.9	66.0	66.3	77.3	79.2
Female							
Total, science/eng ...	84.6	74.8	73.8	70.8	70.7	77.8	80.9
Physics/astronomy ..	90.0	73.3	40.0	81.8	68.8	56.0	66.7
Chemistry	83.6	69.2	70.8	79.0	65.2	81.1	80.0
Earth/env/mar sci ..	80.0	75.0	70.6	76.9	71.4	85.7	79.5
Engineering	40.0	100.0	76.5	74.1	58.8	78.7	77.6
Chemical	*	0.0	100.0	75.0	50.0	70.0	100.0
Civil	0.0	*	100.0	50.0	0.0	50.0	50.0
Electrical	100.0	100.0	100.0	100.0	42.9	71.4	64.3
Mechanical	0.0	100.0	60.0	0.0	100.0	25.0	70.0
Mathematical science	94.7	69.6	78.2	67.7	59.8	79.5	80.0
Agricultural science	66.7	71.4	26.7	46.7	53.3	63.4	72.9
Biological sciences.	76.5	69.4	64.5	66.2	78.6	73.7	71.4
Social sciences	80.2	70.6	71.6	62.7	58.9	66.1	65.1
Psychology	82.8	75.4	75.2	74.4	74.7	78.5	81.7
Total, non-sci/eng(2).	86.6	78.6	76.5	71.1	72.8	78.3	80.3

* No doctorate recipients reported postdoctoral employment plans.

(1) Only doctorates with definite employment commitments in the United States are reported here. A "definite commitment" is defined as having a signed contract, acceptance of a formal offer, etc.

(2) Non-science/engineering doctorates in this table include doctorates whose field of specialization is unknown.

SOURCES: National Science Foundation and National Research Council

Table 15. Proportion of new science and engineering doctorates pursuing postdoctoral study in field of degree by sex: for selected years(1)

Field	1970	1972	1974	1976	1978	1980	1982
Total, male and female							
Total, science/eng ...	96.0	91.8	90.9	88.1	59.3	83.6	85.7
Physics/astronomy ..	95.1	87.0	90.3	84.6	89.2	86.1	87.6
Chemistry	85.5	80.9	84.1	77.5	78.2	72.4	76.0
Earth/env/mar sci ..	95.5	97.8	97.6	88.5	90.7	80.0	84.9
Engineering	92.2	91.0	86.7	68.2	75.3	67.1	76.5
Chemical	83.3	84.6	84.0	77.1	61.3	70.8	68.4
Civil	93.3	89.3	80.0	57.1	71.4	55.6	80.0
Electrical	85.7	85.2	85.4	51.7	58.3	58.5	62.2
Mechanical	84.2	96.3	87.1	75.0	70.7	59.4	73.0
Mathematical science	97.2	89.2	91.2	71.7	82.1	83.1	84.0
Agricultural science	90.9	89.2	84.8	60.0	71.6	54.9	57.4
Biological sciences.	92.7	88.3	86.9	81.8	84.1	78.4	80.4
Social sciences	84.9	84.9	81.0	62.7	68.8	57.4	62.3
Psychology	94.2	87.9	87.7	71.3	75.5	72.3	73.9
Total, non sci/eng(2).	86.0	86.3	85.8	64.7	68.0	65.4	62.8
Male							
Total, science/eng ...	96.0	92.0	90.9	88.6	89.6	83.6	85.4
Physics/astronomy ..	95.0	87.3	90.2	84.5	89.5	86.5	87.2
Chemistry	86.0	81.1	84.5	79.4	80.6	74.1	77.8
Earth/env/mar sci ..	95.3	97.7	97.5	89.4	90.9	80.5	87.3
Engineering	92.2	91.0	86.7	68.5	75.3	67.7	76.5
Chemical	82.6	84.6	84.0	77.1	61.3	69.6	68.4
Civil	93.3	89.3	78.6	57.1	71.4	58.8	78.6
Electrical	85.7	85.2	85.4	51.7	60.0	57.5	62.2
Mechanical	84.2	96.3	87.1	75.0	70.7	61.3	72.2
Mathematical science	97.1	87.8	91.1	72.9	82.1	84.8	86.3
Agricultural science	90.8	89.4	84.0	60.8	70.0	57.1	55.7
Biological sciences.	92.4	88.1	86.4	80.8	83.6	77.6	78.6
Social sciences	88.9	86.7	79.1	65.1	70.2	58.1	60.6
Psychology	94.2	87.1	88.3	70.2	73.6	66.7	69.1
Total, non sci/eng(2).	87.4	85.6	86.4	69.4	66.8	67.0	59.0
Female							
Total, science/eng ...	96.1	90.7	90.8	85.4	88.2	83.6	86.4
Physics/astronomy ..	100.0	75.0	93.8	85.7	82.4	79.2	90.9
Chemistry	79.6	78.3	80.4	55.9	61.2	64.8	65.3
Earth/env sciences .	100.0	100.0	100.0	77.8	87.5	76.5	75.0
Engineering	100.0	*	100.0	33.3	75.0	40.0	76.9
Chemical	100.0	*	*	*	*	100.0	*
Civil	*	*	100.0	*	*	0.0	100.0
Electrical	*	*	*	*	0.0	100.0	*
Mechanical	*	*	*	*	*	0.0	100.0
Mathematical science	100.0	100.0	100.0	0.0	83.3	50.0	71.4
Agricultural science	100.0	87.5	100.0	50.0	100.0	44.4	63.0
Biological sciences.	94.3	89.8	88.5	85.1	85.7	80.5	84.6
Social sciences	71.4	70.0	84.8	57.5	65.9	56.4	66.0
Psychology	94.4	90.6	86.3	73.3	78.5	80.0	79.9
Total, non sci/eng(2).	80.5	88.5	84.0	53.7	70.5	63.0	68.6

* No doctorate recipients reported postdoctoral study plans.

(1) Only doctorates with definite postdoctoral study commitments in the United States are reported here. A "definite commitment" is defined as having a signed contract, acceptance of a formal offer, etc.

(2) Non-science/engineering doctorates in this table include doctorates whose field of specialization is unknown.

SOURCE: National Science Foundation and National Research Council

appendix

page

reproduction of survey questionnaire 118

FEDAC No. R231
Approval Expires 6/82

SURVEY OF EARNED DOCTORATES
AWARDED IN
THE UNITED STATES, 1981-82

Conducted by
The Commission on Human Resources of
the National Research Council
In Cooperation with
The American Council of Learned Societies,
The Social Science Research Council,
The Council of Graduate Schools in the United States,
and Other Graduate Deans

Supported by
The National Science Foundation,
The Department of Education,
The National Endowment for the Humanities, and
The National Institutes of Health

To the Doctoral Candidate:

This is a brief description of the Survey of Earned Doctorates indicating how the resulting data are used and how the individual confidentiality of data is protected. The basic purpose of this survey is to gather objective data about doctoral graduates, data that are important in improving graduate education both at your home institution and at a national level. Often, decisions by federal, state, and private agencies to develop new programs or support present ones are based in part on the data developed by this survey. We ask your cooperation with the project.

The information requested on the accompanying questionnaire is largely self-explanatory. Please complete it, detach it along the perforated line, and return it to your Graduate Dean. On the back of this sheet is a Specialties List with code numbers and titles for classifying your fields of specialization. This will be useful in connection with several items on the questionnaire. If none of the detailed fields listed seems to be appropriate, note the "General" and "Other" categories.

What is the Survey of Earned Doctorates?

The survey form is distributed annually with the cooperation of the Graduate Deans and filled out by all graduates who have completed requirements for their doctoral degrees. Research doctorates in all fields are included, but professional degrees such as the MD, DDS, and DVM are not included because information about recipients of those degrees is compiled elsewhere. The cumulative file goes back to 1920 and is called the Doctorate Records File.

The use of the doctoral data has been increasing, partly because of the implications for graduate education stemming from the change in the growth pattern of the number of persons receiving doctorates (562 in 1920; 3,278 in 1940; 9,735 in 1960; 29,497 in 1970; peaking at 33,727 in 1973; and now at 30,982 in 1980). This survey attempts to supply some of the *information* as of the time the doctorate is received.

What uses are made of the Survey data?

The data collected by this survey questionnaire become part of the Doctorate Records File maintained by the Commission on Human Resources of the National Research Council. In addition, all data collected will be provided to the National Science Foundation, the National Endowment for the Humanities, the National Institutes of Health, and the Department of Education. The Survey data are collected with the intention that they will be put to use, but only under carefully defined conditions. Such data as the number of degrees awarded in each field of specialization, the educational preparation of degree recipients, their sources of financial support, the length of time required to attain the degree, and postdoctoral employment plans of doctorate recipients are of great interest to graduate schools, employers, the scholarly community, and the nation generally. The Doctorate Records File is used for a limited number of carefully defined follow-up research studies. Each year a sample of doctorate recipients is selected for inclusion in a longitudinal research file maintained for the National Science Foundation, the National Institutes of Health, and the National Endowment for the Humanities. It is anticipated that in the future, as in the past, participation in the follow-up studies will be voluntary.

Statistical summaries from the Doctorate Records File are used by educational institutions, professional societies, and government agencies. Some specific examples are:

- An extensive statistical summary of the data is published and distributed to all graduate schools about every five years.(1) These reports have been widely used by graduate schools and states to evaluate their progress in providing doctoral education. The data may also be useful to graduate students as an aid in selecting a graduate department.
- Annual reports containing statistical summaries based on the most recent year's Survey are distributed to graduate schools, government agencies, and any others on request.(2)

The confidentiality of Survey data is carefully protected.

This information is solicited under the authority of the National Science Foundation Act of 1950, as amended in P.L. 507 (42 U.S.C. 186) Section 3(a)(6), and Executive Order 10521 (March 17, 1954). Within the extent provided by law, all information you provide will be treated as confidential, will be safeguarded in accordance with the provisions of the Privacy Act of 1974, and will be used for statistical purposes only. Information will be released only in the form of statistical summaries or in a form which does not identify information about any particular person. There are only two exceptions to this policy: (1) information (name, year, and field of degree) is released to institutions from which you received degrees and to other organizations as part of the address search procedure for follow-up research studies; and (2) information from your form will be made available to the institution where you receive your doctorate degree and to the National Science Foundation, the National Endowment for the Humanities, the National Institutes of Health, and the Department of Education. Your response is entirely voluntary and your failure to provide some or all of the information will in no way affect you.

(1) National Academy of Sciences, *A Century of Doctorates — Data Analyses of Growth and Change*, Washington, D.C. 1978.
(2) National Academy of Sciences, *Summary Report 1980, Doctorate Recipients from United States Universities*, Washington, D.C. 1981.

NSF Form 558 March 1981

SPECIALTIES LIST

MATHEMATICS

000 Algebra
010 Analysis & Functional Analysis
020 Geometry
030 Logic
040 Number Theory
050 Probability & Math. Statistics (see also 544, 670, 725, 727, 920)
060 Topology
080 Computing Theory & Practice
082 Operations Research (see also 478)
085 Applied Mathematics
098 Mathematics, General
099 Mathematics, Other*

COMPUTER SCIENCES

079 Computer Sciences* (see also 437)

ASTRONOMY

101 Astonomy
102 Astrophysics

PHYSICS

110 Atomic & Molecular
132 Acoustics
134 Fluids
135 Plasma
136 Optics
140 Elementary Particles
150 Nuclear Structure
160 Solid State
198 Physics, General
199 Physics, Other*

CHEMISTRY

200 Analytical
210 Inorganic
220 Organic
230 Nuclear
240 Physical
250 Theoretical
270 Pharmaceutical
275 Polymer
298 Chemistry, General
299 Chemistry, Other*

EARTH, ENVIRONMENTAL AND MARINE SCIENCES

301 Mineralogy, Petrology
305 Geochemistry
310 Stratigraphy, Sedimentation
320 Paleontology
330 Structural Geology
341 Geophysics (Solid Earth)
350 Geomorph. & Glacial Geology
391 Applied Geol., Geol. Engr. & Econ. Geol.
360 Hydrology & Water Resources
370 Oceanography
397 Marine Sciences, Other*
381 Atmospheric Physics and Chemistry
382 Atmospheric Dynamics
383 Atmospheric Sciences, Other*
388 Environmental Sciences, General (see also 480, 528)
389 Environmental Sciences, Other*
398 Earth Sciences, General
399 Earth Sciences, Other*

ENGINEERING

400 Aeronautical & Astronautical
410 Agricultural
415 Biomedical
420 Civil
430 Chemical
435 Ceramic
437 Computer
440 Electrical
445 Electronics
450 Industrial
455 Nuclear
460 Engineering Mechanics
465 Engineering Physics
470 Mechanical
475 Metallurgy & Phys. Met. Engr.
476 Systems Design & Systems Science
478 Operations Research (see also 082)
479 Fuel Tech. & Petrol. Engr.
480 Sanitary & Environmental
486 Mining
497 Materials Science
498 Engineering, General
499 Engineering, Other*

AGRICULTURAL SCIENCES

500 Agronomy
501 Agricultural Economics
502 Animal Husbandry
503 Food Science & Technology
504 Fish & Wildlife
505 Forestry
506 Horticulture
507 Soils & Soil Science
510 Animal Science & Animal Nutrition
511 Phytopathology
518 Agriculture, General
519 Agriculture, Other*

MEDICAL SCIENCES

522 Public Health & Epidemiology
523 Veterinary Medicine
526 Nursing
527 Parasitology
528 Environmental Health
534 Pathology
536 Pharmacology
537 Pharmacy
538 Medical Sciences, General
539 Medical Sciences, Other*

BIOLOGICAL SCIENCES

540 Biochemistry
542 Biophysics
544 Biometrics & Biostatistics (see also 050, 670, 725, 727, 920)
545 Anatomy
546 Cytology
547 Embryology
548 Immunology
550 Botany
560 Ecology
564 Microbiology & Bacteriology
566 Physiology, Animal
567 Physiology, Plant
569 Zoology
570 Genetics
571 Entomology
572 Molecular Biology
576 Nutrition and/or Dietetics
589 Neurosciences
598 Biological Sciences, General
599 Biological Sciences, Other*

PSYCHOLOGY

600 Clinical
610 Counseling & Guidance
620 Developmental & Gerontological
630 Educational
635 School Psychology
641 Experimental
642 Comparative
643 Physiological
650 Industrial & Personnel
660 Personality
670 Psychometrics (see also 050, 544, 725, 727, 920)
680 Social
698 Psychology, General
699 Psychology, Other*

SOCIAL SCIENCES

700 Anthropology
708 Communications*
710 Sociology
720 Economics (see also 501)
725 Econometrics (see also 050, 544, 670, 727, 920)
727 Statistics (see also 050, 544, 670, 725, 920)
740 Geography
745 Area Studies*
751 Political Science
752 Public Administration
755 International Relations
760 Criminology & Criminal Justice
770 Urban & Reg. Planning
798 Social Sciences, General
799 Social Sciences, Other*

HUMANITIES

802 History & Criticism of Art
804 History, American
805 History, European
806 History, Other*
807 History & Philosophy of Science
808 American Studies
809 Theatre and Theatre Criticism
830 Music
831 Speech as a Dramatic Art (see also 885)
832 Archeology
833 Religion (see also 881)
834 Philosophy
835 Linguistics
836 Comparative Literature
878 Humanities, General
879 Humanities, Other*

LANGUAGES & LITERATURE

811 American
812 English
821 German
822 Russian
823 French
824 Spanish & Portuguese
826 Italian
827 Classical*
829 Other Languages*

EDUCATION

900 Foundations: Social & Philosoph.
910 Educational Psychology
908 Elementary Educ., General
909 Secondary Educ., General
918 Higher Education
919 Adult Educ. & Extension Educ.
920 Educ. Meas. & Stat.
929 Curriculum & Instruction
930 Educ. Admin. & Superv.
940 Guid., Couns., & Student Pers.
950 Special Education (Gifted, Handicapped, etc.)
960 Audio-Visual Media

TEACHING FIELDS

970 Agriculture Educ.
972 Art Educ.
974 Business Educ.
975 Early Childhood Educ.
976 English Educ.
978 Foreign Languages Educ.
980 Home Economics Educ.
982 Industrial Arts Educ.
984 Mathematics Educ.
986 Music Educ.
987 Nursing Educ.
988 Phys. Ed., Health, & Recreation
989 Reading Education
990 Science Educ.
992 Social Science Educ.
993 Speech Education
994 Vocational Educ.
996 Other Teaching Fields*
998 Education, General
999 Education, Other*

OTHER PROFESSIONAL FIELDS

881 Theology (see also 833)
882 Business Administration
883 Home Economics
884 Journalism
885 Speech & Hearing Sciences (see also 831)
886 Law & Jurisprudence
887 Social Work
891 Library & Archival Science
897 Professional Field, Other*

899 OTHER FIELDS*

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* Identify the specific field in the space provided on the questionnaire in items 11 and 12.

Form Approved
FEDAC No. R231
Approval Expires 6/82

SURVEY OF EARNED DOCTORATES, 1981-82

This form is to be returned to the GRADUATE DEAN, for forwarding to .... Commission on Human Resources
National Research Council
2101 Constitution Avenue, Washington, D. C. 20418

Please print or type.

1. Name in full: .... (9-30)
(Last Name) (First Name) (Middle Name)
Cross Reference: Maiden name or former name legally changed ....

2. Permanent address through which you could always be reached: (Care of, if applicable) ....
....
(Number) (Street) (City)
....
(State) (Zip Code) (Or Country if not U.S.)

3. U.S. Social Security Number: __ __ __ - __ __ - __ __ __ __ (33-41)

4. Date of birth: .... Place of birth: ....
(10-14) (Month) (Day) (Year) (15-16) (State) (Or Country if not U.S.)

5. Sex: 1 ☐ Male 2 ☐ Female (17)

6. Marital status: 1 ☐ Married 2 ☐ Not married (including widowed, divorced) (18)

7. Citizenship: 0 ☐ U.S. native 2 ☐ Non U.S., Immigrant (Permanent Resident)
1 ☐ U.S. naturalized 3 ☐ Non-U.S., Non-Immigrant (Temporary Resident) (19)
If Non-U.S., indicate country of present citizenship .... (20-21)

8. What is your racial background? (Check only one) 0 ☐ American Indian or Alaskan Native 2 ☐ Black
1 ☐ Asian or Pacific Islander 3 ☐ White (22)

8a. Is your ethnic heritage Hispanic? ☐ Yes ☐ No (23)

8b. If yes, is it: 0 ☐ Mexican American 1 ☐ Puerto Rican 2 ☐ Other Hispanic (24)

9. Number of dependents: Do not include yourself. (Dependent = someone receiving at least one half of his or her support from you) .... (25)

EDUCATION

10. High school last attended: .... (26-27)
(School Name) (City) (State)
Year of graduation from high school: .... (28-29)

11. List in the table below all collegiate and graduate institutions you have attended including 2-year colleges. List chronologically, and include your doctoral institution as the last entry.

Institution Name	Location	Years Attended		Major Field		Degree (if any)		
				Use Specialties List			Granted	
		From	To	Name	Number	Title of Degree	Mo.	Yr.

12. Enter below the title of your doctoral dissertation and the most appropriate classification number and field. If a project report or a musical or literary composition (not a dissertation) is a degree requirement, please check box. ☐ (12)
Title ....
....
....
Classify using Specialties List
Number .... Name of field ....

13. Name the department (or interdisciplinary committee, center, institute, etc.) and school or college of the university which supervised your doctoral program: ....
(Department/Institute/Committee/Program) (School)

14. Name of your adviser for dissertation, project report or music/literary composition: ....
(Last Name) (First Name) (Middle Initial)

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continued on next page

SURVEY OF EARNED DOCTORATES, Cont.

15. Please enter a "1" beside your primary source of support during graduate study. Enter a "2" beside your secondary source of support during graduate study. Check (√) all other sources from which support was received.

a —— NSF Fellowship
b —— NSF Traineeship
c —— NIH Fellowship
d —— NIH Traineeship
e —— NDEA Fellowship
f —— Title IX Graduate & Professional Opportunities Pgm. Fellowship
g —— Other HEW
h —— AEC/ERDA/DOE Fellowship
j —— GI Bill
k —— Other Federal support (specify) ....
l —— Woodrow Wilson Fellowship
m —— Other U.S. national (non-federal) fellowship
.... (specify)
n —— University Fellowship
o —— Teaching Assistantship
p —— Research Assistantship
q —— Educational fund of industrial or business firm
r —— Other institutional funds
.... (specify)
s —— Own earnings
t —— Spouse's earnings
u —— Family contributions
v —— Loans (NDSL direct)
w —— Other loans
x —— Other
.... (specify) (26-49)

16. Please check the space which most fully describes your status during the year immediately preceding the doctorate.

0 ☐ Held fellowship
1 ☐ Held assistantship
2 ☐ Held own research grant
3 ☐ Not employed
4 ☐ Part-time employed

Full-time Employed in: (Other than 0, 1, 2)
5 ☐ College or university, faculty
6 ☐ College or university, non-faculty
7 ☐ Elem. or sec. school, teaching
8 ☐ Elem. or sec. school, non-teaching
9 ☐ Industry or business
(11) ☐ Other (specify) ....

(12) ☐ Any other (specify) .... (50)

17. How well defined are your postgraduation plans?
0 ☐ Am returning to, or continuing in, predoctoral employment
1 ☐ Have signed contract or made definite commitment
2 ☐ Am negotiating with one or more specific organizations
3 ☐ Am seeking appointment but have no specific prospects

4 ☐ Other (specify) .... (51)

18. What are your immediate postgraduation plans?
0 ☐ Postdoctoral fellowship
1 ☐ Postdoctoral research associateship
2 ☐ Traineeship
3 ☐ Other study (specify) ....
Go to Item "19"
4 ☐ Employment (other than 0, 1, 2, 3)
5 ☐ Military service
6 ☐ Other (specify).............................. (52)
Go to Item "20"

19. If you plan to be on a postdoctoral fellowship, associateship, traineeship or other study

a. What was the most important reason for taking a postdoctoral appointment? (Check only one.)
0 ☐ To obtain additional research experience in my doctoral field
1 ☐ To work with a particular scientist or research group
2 ☐ To switch into a different field of research
3 ☐ Could not obtain the desired type of employment position
4 ☐ Other reason (specify) .... (53)

b. What will be the field of your postdoctoral study?
Please enter number from Specialties List .... (54-56)

c. What will be the primary source of research support?
0 ☐ U.S. Government
1 ☐ College or university
2 ☐ Private foundation
3 ☐ Nonprofit, other than private foundation
4 ☐ Other (specify)
....
6 ☐ Unknown (57)
Go to Item "21"

20. If you plan to be employed, enter military service, or other —

a. What will be the type of employer?
0 ☐ 4-year college or university other than medical school
1 ☐ Medical school
2 ☐ Jr. or community college
3 ☐ Elem. or sec. school
4 ☐ Foreign government
5 ☐ U.S. Federal government
6 ☐ U.S. state government
7 ☐ U.S. local government
8 ☐ Nonprofit organization
9 ☐ Industry or business
(11) ☐ Self-employed
(12) ☐ Other (specify) .... (58)

b. Indicate what your *primary* work activity will be with "1" in appropriate box; *secondary* work activity (if any) with "2" in appropriate box.
0 ☐ Research and development
1 ☐ Teaching
2 ☐ Administration
3 ☐ Professional services to individuals
5 ☐ Other (specify)............................ (59-60)

c. In what field will you be working?
Please enter number from Specialties List .... (61-63)

d. Did you consider taking a postdoctoral appointment?
Yes —— No —— (64)
If yes, why did you decide against the postdoctoral?
0 ☐ No postdoctoral appointment available
1 ☐ Felt that I would derive little or no benefit from a postdoctoral appointment
2 ☐ Had more attractive employment opportunity
3 ☐ Other (specify) .... (65)
Go to Item "21"

21. What is the name and address of the organization with which you will be associated?

....
(Name of Organization)

....
(Street) (City, State) (Or Country if not U.S.) (66-71)

22. Please indicate, by circling the highest grade attained, the education of

your father:	none	1 2 3 4 5 6 7 8 Elementary school	9 10 11 12 High school	1 2 3 4 College	MA, MD PhD Graduate	Postdoctoral	(72)
your mother	none 0	1 2 3 (1) 4 5 6 (2) 7 8 (3)	9 10 11 (4) 12 (5)	1 2 3 (6) 4 (7)	MA, MD (8) PhD (9)	Postdoctoral (11)	(73)

Signature .... Date .... (74-76)

If you would like to receive a summary of the results of this survey, please check box. ☐ (79)

other science resources publications

Science Resources Studies Highlights

R&D Funds

	NSF No.	Price
"Dollar Value of U.S. R&D Expenditures Overseas Declined in 1982"	83-329	-----
"Companies Plan Increases in R&D Spending Through 1984"	83-327	-----
"Defense, General Science, and Transportation Functions Lead 1984 Federal R&D Growth"	83-323	-----
"Defense and Economy Major Factors in 7% Real Growth in National R&D Expenditures in 1984"	83-316	-----
"Company and Federal Support Produce 17% Industrial R&D Spending Increase in 1981"	83-313	-----
"Federal Science/Engineering (S/E) Support to Universities and Colleges Rose by 6% in FY 1981; Non-S/E Support Down 25%"	83-306	-----
"Real Growth Rate of Academic R&D Expenditures Slowed to 2% in FY 1981"	83-304	-----
"Significant Increase Expected in Industrial R&D Performance of Federal R&D Programs in FY 1983"	82-329	-----
"Growth in Federal Basic Research Support in 1980-83 Moves at Slower Rate than in Previous Four Years"	82-325	-----
"Companies Plan R&D Expenditure Increases for 1983: Growth Rate Down"	82-324	-----

S/E Personnel

	NSF No.	Price
"No Change in Science and Engineering Student Quality Seen by 60% of Academic Officials: At Least 25% Perceive Improvement"	83-322	-----
"Technical Employment Growth Accelerates in Selected Nonmanufacturing Industries"	83-321	-----
"Academic Employment of Scientists and Engineers Continued to Grow in 1982, But Slower Than in Other Economic Sectors"	83-317	-----
"Growth in Neuroscience May be Leveling Off"	83-314	-----
"Projected Employment Scenarios Show Possible Shortages in Some Engineering and Computer Specialties"	83-307	-----
"Manufacturing Employment Becoming Increasingly More Technological"	83-303	-----
"Growth in Science and Engineering Employment Accelerated in 1980 to 1981—But Demand May Have Slackened in 1982"	83-300	-----
"Labor Market Slackens for New Science and Engineering Graduates"	82-330	-----
"Growth in Employment of Science and Engineering Doctorates Continues, Led by Computer Scientists"	82-328	-----
"Employment of Recent Science and Engineering (S/E) Graduates in S/E Fields Increased"	82-320	-----
"Labor Markets for New Science and Engineering Graduates in Private Industry"	82-310	-----
"Growth in Scientific and Engineering Employment Slows Between 1978-80"	82-303	-----

Detailed Statistical Tables

R&D Funds

	NSF No.	Price
Research and Development in Industry, 1981. Funds, 1981; Scientists & Engineers, January 1982	83-325	-----
Federal Funds for Research and Development, Fiscal Years 1982, 1983, and 1984, Volume XXXII	83-319	
Academic Science/Engineering: R&D Funds, Fiscal Year 1981	83-308	-----

S/E Personnel

	NSF No.	Price
Scientists, Engineers, and Technicians in Manufacturing and Nonmanufacturing Industries: 1980-81	83-324	In press
Academic Science/Engineering: Scientists and Engineers, January 1982	83-311	-----
Characteristics of Doctoral Scientists and Engineers in the United States: 1981	83-332	-----
U.S. Scientists and Engineers: 1980	83-314	-----
Characteristics of Recent Science/Engineering Graduates: 1980	83-313	-----

Reports

R&D Funds

	NSF No.	Price
Federal Funds for Research and Development, Fiscal Years 1981, 1982, and 1983, Volume XXXI	83-320	$2.50
Federal Support to Universities, Colleges, and Selected Nonprofit Institutions, 1981	83-315	$6.50
Trends to 1982 in Industrial Basic Research	83-302	$3.50
Federal R&D Funding for Energy: Fiscal Years 1971-83	83-301	-----
1990 R&D Funding Projections	82-315	$3.50

S/E Personnel

	NSF No.	Price
Changing Employment Patterns of Scientists, Engineers, and Technicians in Manufacturing Industries: 1977-80	82-331	-----
Women and Minorities in Science and Engineering	82-302	$7.00

Composite

	NSF No.	Price
National Patterns of Science and Technology Resources: 1982	83-319	$5.00